

TITANINE DOPE

FIRST AERO WEEKLY IN THE WORLD

FLIGHT

The
**AIRCRAFT
ENGINEER**

A JOURNAL OF
PRACTICE, AND
LOCOMOTION

Aircraft. Engines. Access. & Tyres. Prep. & Miss. **IPS**
13 6 9½ 1½

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 1051. (No. 7. Vol. XXI.)

Registered at the General Post
Office as a Newspaper.

FEBRUARY 14, 1929.

SIXPENCE WEEKLY.

"SINTONA" AEROPLANE LINEN FABRICS to BRITISH and FOREIGN SPECIFICATIONS.

Manufacturers: THOS. SINTON & Co., Ltd., Tandragee, Co. Armagh, N. Ireland.
Telegrams: Sinton, Tandragee.

Selling Agents: J. W. GATES & Co., 133, Oxford Street, London, W.1.
Telegrams: Gates, London, Regent 1164. Telephone: Regent 1164.

For her wonderful flight round
Africa in a Cirrus-Moth aeroplane
The Hon. Lady Bailey
chose to
"Fit and Forget"

K.L.G

SPARKING PLUGS

MALLITE PLYWOOD

Telephone: 1
BISHOPSGATE
5641
(4 lines).

USED BY THE LEADING AIRCRAFT MANUFACTURERS
THROUGHOUT THE WORLD.

Telegrams:
VICPLY
KINLAND
LONDON.

Manufactured to the BRITISH AIR MINISTRY SPECIFICATION, 2.V.3., by
THE AERONAUTICAL & PANEL PLYWOOD CO., LTD., 218-226, KINGSLAND ROAD, LONDON, E.2.

PALMER

Landing Wheels and Tyres
Designed for —
not adapted to —
Aeroplanes.

The Palmer Tyre, Ltd., 100-106, Cannon Street, London, E.C.4. 47



Speed—

Climb—

Manœuvrability—

Altitude Performance—

The *"Bristol"* **BULLDOG**

ALL-STEEL SINGLE-SEATER FIGHTER

fitted with the "Bristol" Jupiter Supercharged radial air-cooled engine—
recognised as the most redoubtable machine of its type.

**Adopted for the equipment of the
Royal Air Force.**

Designed and manufactured by

**THE BRISTOL AEROPLANE CO., LTD.,
FILTON — BRISTOL.**

Telegrams: "Aviation, Bristol."

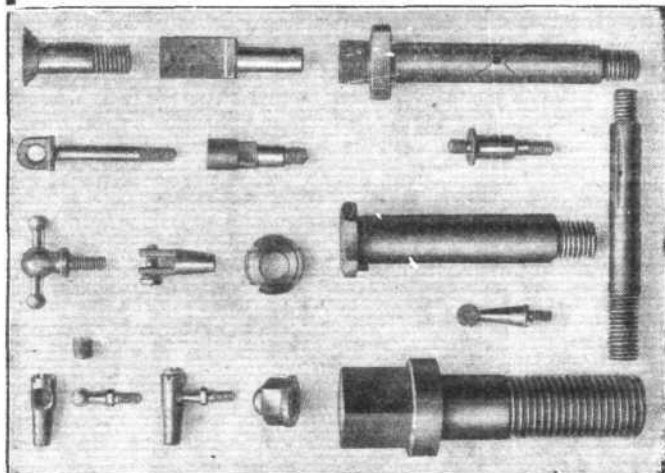
Telephone: 3906 Bristol.

Kindly mention "Flight" when corresponding with advertisers.

WE SPECIALISE IN SPECIAL PARTS.

THE PARTS WE MAKE CAN
BE RELIED UPON FOR QUALITY,
ACCURACY AND FINISH.

SEND PARTICULARS OF YOUR REQUIREMENTS.



RUBERY, OWEN & CO.

Darlaston,

South Staffs.

PHONE: DARLASTON 130.

R.E.W.

SERCK RADIATORS for AERO ENGINES

TRADE MARK

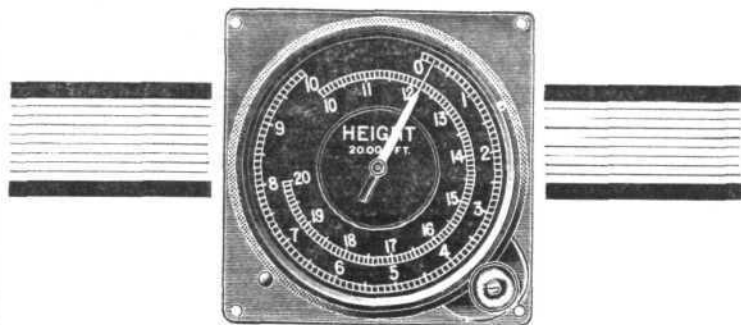


WE made thousands of Aeroplane Radiators of all types for the Army and Navy during the war. Under control of the Air Ministry we were known as the National Aircraft Radiator Factory. We have an extensive and up-to-date plant for drawing Aeroplane Tubes of any length or design, and our experience of Radiator manufacturing covers a period of seventeen years.

SERCK RADIATORS, LTD.,
Warwick Rd., Greet, Birmingham.
Telephone: - - Victoria 531.
Telegrams: - - "Serckrad,"
Birmingham.

BRASS & COPPER TUBES.

WE can supply Brass and Copper tubes of every design in quantities, guaranteed perfect in every respect.



ALTIMETER

Special high-grade instrument of standard calibration with rack action. Black enamelled case with black dial and white figures. Weight 1 1/2 lbs. Supplied with height readings as follows:

0—30,000 feet.

0—80,000 feet.

Luminous dials and hands extra.

Metric Scale in place of above supplied without extra charge.

Aircraft instruments and fittings of every description supplied.

Brown Brothers Limited

— Allied Companies —

THOMSON AND BROWN BROTHERS LTD.

BROWN BROTHERS (IRELAND) LTD.

GREAT EASTERN STREET, LONDON, E.C.2.

Phone: Bishopsgate 3244.

40% lighter than Aluminium

That is one of the features of our **MAGNESIUM ALLOYS**—another is their excellent physical properties. These factors make the **MAGNESIUM ALLOYS** peculiarly suitable for numerous parts in Aircraft and Automobile work.

The Alloys can be supplied in the form of Castings, Forgings, Extrusions, etc.

PLEASE WRITE US FOR ALL PARTICULARS.

British Maxium Ltd

Point Pleasant, Wandsworth,
LONDON, S.W.18.

Telegrams: "Ognesiuma, Put, London."

Telephone: Putney 4807.

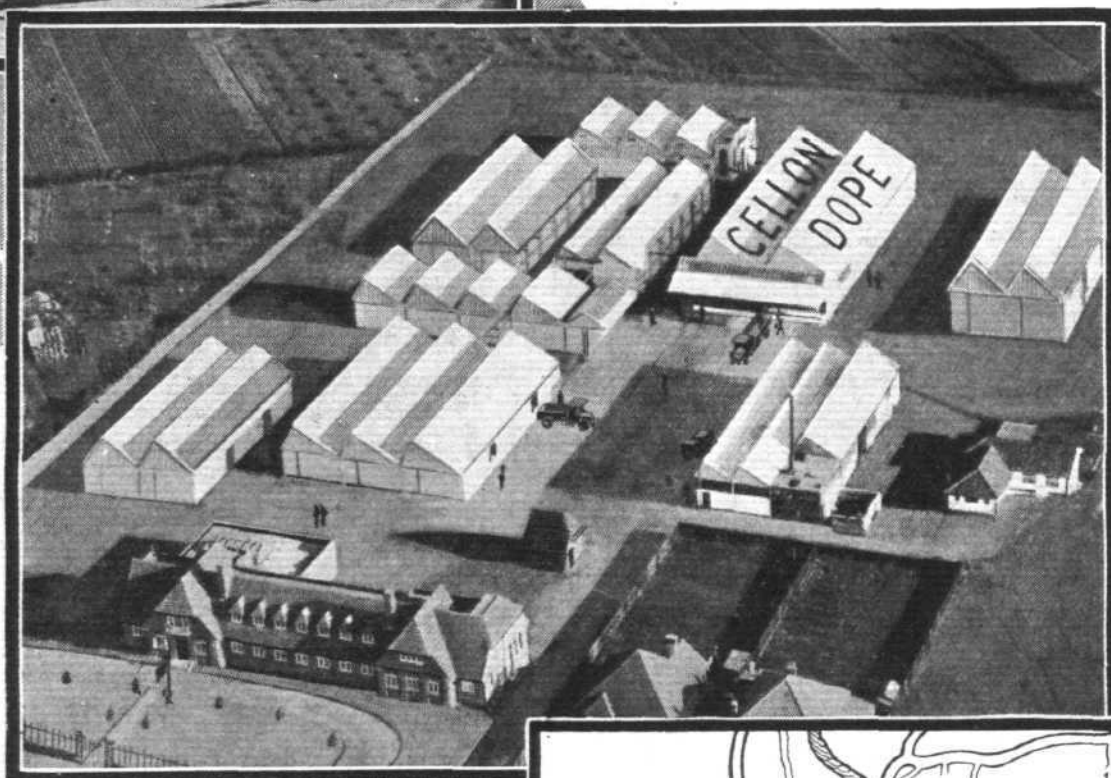
Save time by using the Air Mail.

A CHANGE OF ADDRESS

The new Cellon factory at Ham is to be much larger and better in every way than the old quarters. Every up-to-date device, every possible improvement has been installed to cater for the greatly increased demand for Cellon and Ceric products.



The old quarters at Richmond.



The new up-to-date Cellon Factory at Ham, photographed from an aeroplane—which, incidentally, was doped with CELLON.

CELLON

We always welcome visitors to our Factory, as of old, and our new works are well worth a visit.

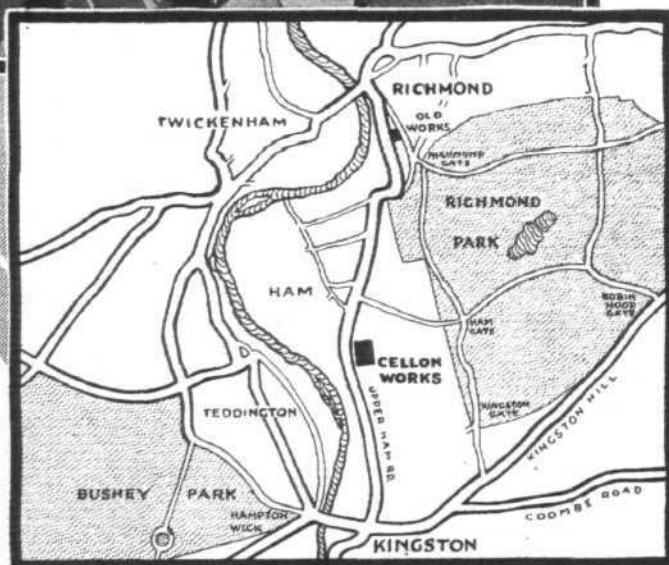
To commemorate the opening of the new factory a fully illustrated booklet has been prepared entitled "Finish." A copy will be sent post free on request.

CELLON, LTD.,

Upper Ham Road, Kingston-on-Thames.

Telephone Kingston 6061 (4 lines).

Telegrams: "Ajawb, Phone, Kingston-on-Thames."



FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aeronautical Weekly in the World. Founded January, 1909

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 1051. (No. 7. Vol. XXI.)

FEBRUARY 14, 1929

Weekly, Price 6d.
Post free, 7d.

Flight

The Aircraft Engineer and Airships

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telephone: Holborn 3211. Telegrams: Truditur, Westcent, London.

Annual Subscription Rates, Post Free.

United Kingdom .. 30s. 4d. Abroad .. 33s. 0d.*

* Foreign subscriptions must be remitted in British currency.

CONTENTS

	PAGE
Editorial Comment :	
Empire Air Routes	111
Aircraft to the Rescue	112
Mauboussin P.M. 4 Monoplane	113
240 h.p. Walter-Castor Aero Engine	115
Aeroplane Types	116
Future London Air Ports	117
Eddies	118
Private Flying: Suffolk Club's Welcome to Lady Bailey	119
Light 'Plane Clubs	121
Airisms From the Four Winds	123
Brief Literary Reviews	124
In Parliament	125
A Realistic Model by A. E. Jones, Ltd.	126
Royal Air Force	127
A Visit to Southampton Air Port	127
Personals	127
Air Post Stamps	128

"FLIGHT" PHOTOGRAPHS

To those desirous of obtaining copies of "Flight" Photographs, these can be supplied, enlarged or otherwise, upon application to Photo. Department, 36, Great Queen Street, W.C.2.

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

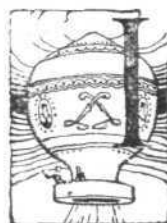
1929.

- Feb. 14 "Air-cooled Engines in Service," by A. H. R. Fedden, before R.Ae.S. and Inst.Ae.E.
- Feb. 28 Lecture, "The Flutter of Aeroplane Wings," by R. A. Frazer, before R.Ae.S. and Inst.Ae.E.
- Mar. 7 Lecture, "Airscrew Body Interference," by C. N. H. Lock, before R.Ae.S. and Inst.Ae.E.
- Mar. 14 Lecture, "Engine Performance Tests," by Wing-Commr. C. B. Hynes, before R.Ae.S. and Inst.Ae.E.
- Mar. 18 Lecture, "The Helicogyre," by V. Isacco, before R.Ae.S. and Inst.Ae.E.
- Mar. 27 Royal Aero Club Annual General Meeting.
- Mar. 29-30 Cinque Ports Flying Club Easter Meeting, Lympne.

INDEX FOR VOL. XX

The 8-page Index and Title Page for Vol. xx of "Flight" (January to December, 1928) is now ready, and can be obtained from the Publishers, 36, Great Queen Street, Kingsway, W.C.2. Price 1s. per copy (1s. 1d. post free).

EDITORIAL COMMENT



IN discussing the subject of Empire air routes, one is somewhat apt to think in terms of the "Great Trunk Lines" only, and to overlook the important part which "feeder lines" must necessarily play in establishing the Empire "Air Net" of the future. It was, therefore, a very useful reminder which was brought up at the annual general meeting of the Empire Press Union a couple of days ago, when attention was called to the position, among other parts of the Empire, of Ceylon and the West Indies.

Major Nicholson and Mr. Shaw, both representing Ceylon newspapers, pointed out that Ceylon, an island with a population of five millions, ought to be entitled to consideration in Empire air route schemes. Unfortunately, the plans for an air service to Australia neglected Ceylon. The reasons for this are, of course, fairly obvious: the direct air route to Australia, when it becomes possible to operate the Karachi-Singapore section, will lie across India to Calcutta, and thence down the coast to Rangoon and Singapore. What may be termed the "Southern Route" would scarcely be practicable, since machines would have to follow the coast down from Karachi to Bombay and Colombo, and then go upwards again along the east coast to Calcutta, the distance across the Bay of Bengal being too great to be undertaken with a flying-boat service, even making use of the Andaman Islands as a place of call on the way to Rangoon. The distance from Colombo to Rangoon is about 1,200 miles, and from Colombo to the Andaman Islands is approximately two-thirds of this distance. The distance from Colombo to Calcutta is about the same, so that the

direct route to Australia would be lengthened very considerably by being laid via Colombo.

In time it may become feasible to operate services across, either to Rangoon or to Penang via the Nicobar Islands or the northern point of Sumatra, but at present this is scarcely feasible, and in any case such a service must be auxiliary to one across India and not a substitute for it.

While one has every sympathy with the claims of Ceylon, and recognises the value which an air line between Colombo and Bombay would have, it does appear that the Colombo line must be in the nature of a "feeder line," and as such a matter for the Indian and Ceylon governments to deal with. As a temporary measure, until such time as the Karachi-Singapore service can be started, there might be something to be said for operating a service terminating at Colombo, there linking up with steamers to the east, but presumably it is hoped to start this second stage in the fairly near future, and therefore not considered to be worth while to establish a temporary Bombay-Colombo service which would have to be reorganised when the Karachi-Calcutta-Singapore route is opened.

Sir Harry Brittain again advanced the claims of the West Indies, and pointed out that unless the British Government took action, America would, in all probability, establish air services there. He also expressed the belief that a route in the West Indies would be a paying proposition. Again, the position is a somewhat difficult one. The West Indies are rather a long way from home, and they are more or less on the direct route between North and South America, and as such, natural ports of call for any air service that may operate between those two great continents. They are, however, not within air reach of England, at least unless and until an airship service can be established, and thus the Mother country cannot, perhaps, be expected to do very much at present. Our main trunk lines must, of necessity, be our first consideration, and we are already sufficiently backward with these. We do feel that it might be rather unwise to scatter our energies too widely at first, although, in order to get ourselves established, it might be policy to grant

a small subsidy towards the operation of a West Indian service, if the bulk of the capital could be found locally.

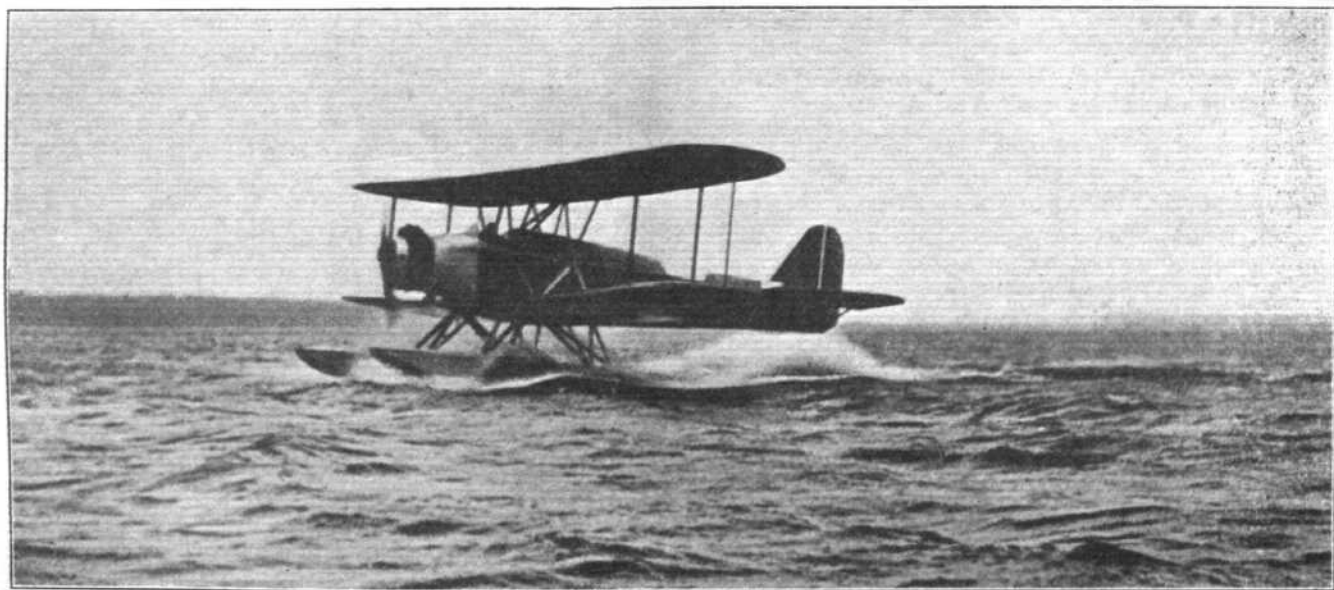
❖ ❖ ❖

**Aircraft
to the
Rescue**

During the last few weeks, the aeroplane has come into its own as a vehicle of rescue under difficult and peculiar circumstances. In Afghanistan, Vickers' and "H.P." biplanes have done excellent work in evacuating large numbers of people, British and other nationalities, from Kabul, and in so doing have accomplished what would have been impossible by any other means. The effects of these rescues cannot well be assessed, but that they are great and manifold will scarcely be denied. Politically, the aid which the Royal Air Force has extended to the subjects of many nationalities cannot but have done a great deal towards a feeling of friendship and goodwill towards not only the R.A.F. itself, but the British nation. Expressions of thanks have been received, for example, from our late enemies, the Germans, for the rescue of German subjects. Men, women and children have been taken out of Kabul and transported to places of safety, and it may be taken for granted that they will, in the future, be firm believers in the utility of air transport. True, this has been a somewhat expensive method of spreading "air-mindedness," but we do not doubt that it has been effective, if not efficient.

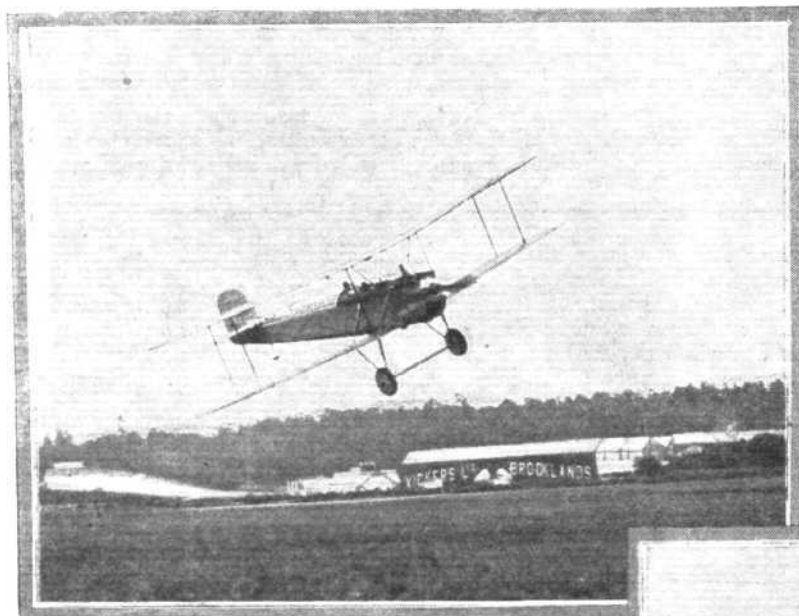
In the Baltic, aeroplanes have done splendid work during the recent frosty weather by searching for and reporting vessels stuck in the ice and unable to proceed. In the Scandinavian countries, aeroplanes have been, and are still being used, not only as mail carriers but for transporting food to islands cut off by the ice and out of reach by any means other than flying. The noise of the aero engine, which, under other circumstances may occasionally become a little irritating, has doubtless sounded like music to a good many isolated families in distress, and so, one way and another, the aeroplane has recently had an opportunity to show that it is not, as some people would have one believe, merely another form of "frightfulness" of no practical use in our everyday lives.

□ □ □ □



AN ANGLO-GERMAN-SWEDISH ALLIANCE : A Heinkel Torpedo carrier, seaplane, fitted with a 700 750 h.p. Armstrong-Siddeley "Leopard" engine, which was recently delivered by air from Germany to Sweden.

VICKERS (AVIATION) LIMITED

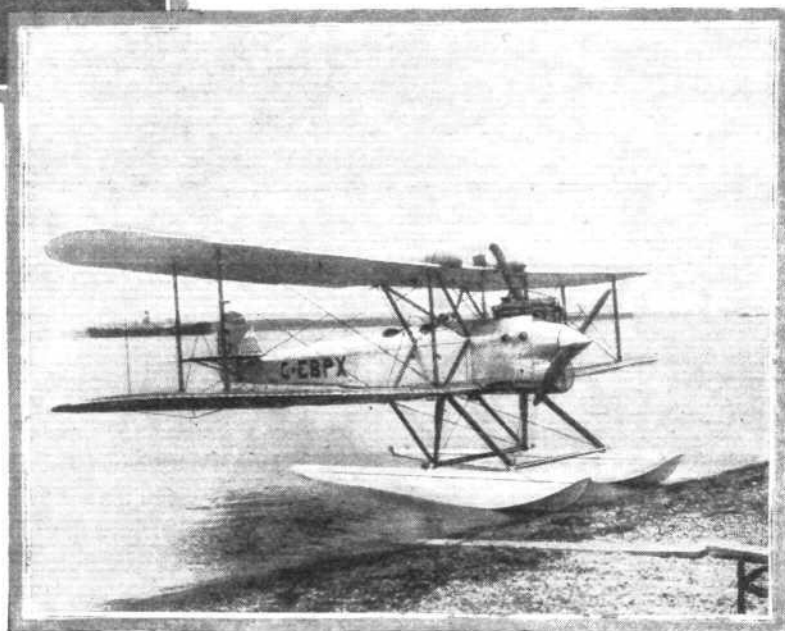


The

VICKERS "VENDACE" (Two-Seater)

The Vickers "Vendace" ("Hispano F.8").
(As acquired by a South American
Government for Advanced Training).

For Survey, Patrol,
Advanced Training
and General Purposes.



The Vickers "Vendace" (A.D.C. "Nimbus").
(As acquired by the Aircraft Operating Co., Ltd.,
for Duty in South American Air Surveys.)

Interchangeable Land Undercarriage
and Twin Float Chassis.

VICKERS HOUSE, BROADWAY, LONDON, S.W.1.

Works :
WEYBRIDGE, SURREY.

Telephone :
VICTORIA 0900.

Telegrams :
VICKERS, SOWEST, LONDON.



Save time by using the Air Mail.



CHINA ORDERS CIRRUS-AVIANS.

Among other deliveries
 during the month of
 January the Company
 supplied 20 Cirrus Mk. III.
engines for installation in
Avro - Avian aircraft
for despatch to China.

SPECIFY A CIRRUS—THE PROVEN LIGHT AERO ENGINE.

Manufacturers :

CIRRUS AERO ENGINES LTD.,

Regent House,

Telephone :
 HOLBORN 4076.

89, KINGSWAY, LONDON, W.C.2.

Cables :
 "AIRDISCO, LONDON."

Kindly mention "Flight" when corresponding with advertisers.

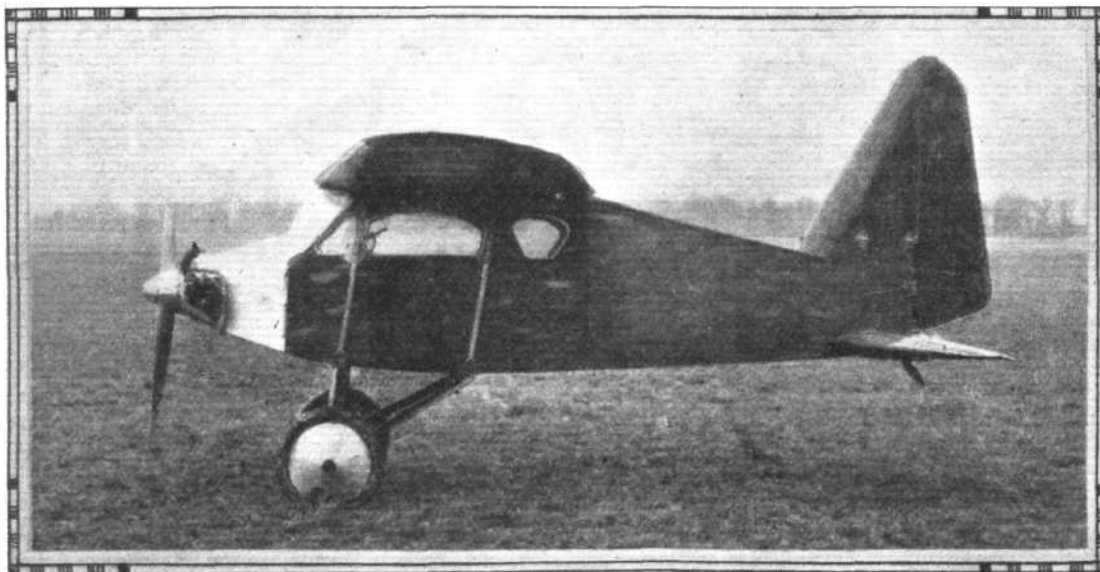
THE MAUBOUSSIN P.M.4

A French Single-Seater Light Monoplane with A.B.C. "Scorpion" Engine

THE "Motor Cycle of the Air" has not yet materialised in this country, although FLIGHT has good cause to know that the type is keenly awaited by a large number of enthusiasts who, having learnt to fly, are not able to afford the present-day type of two-seater, but who would welcome a cheaper machine, even if this should mean flying solo. We are aware that several machines of the single-seater low-power type are coming along, but so far none is available. Without wishing to suggest that we should copy foreign designers,

partly for last year's international light 'plane competition at Orly, and partly to test certain theories of the designer's, who has in contemplation a larger machine of which this may be regarded in some way as a large flying model. The P.M. 4 was not, however, finished in time to take part in the Orly meeting, but it has now been completed and is undergoing tests by the French *Section Technique*.

The P.M.4 is a high-wing monoplane, with the pilot enclosed in a small cabin provided with windscreen and side

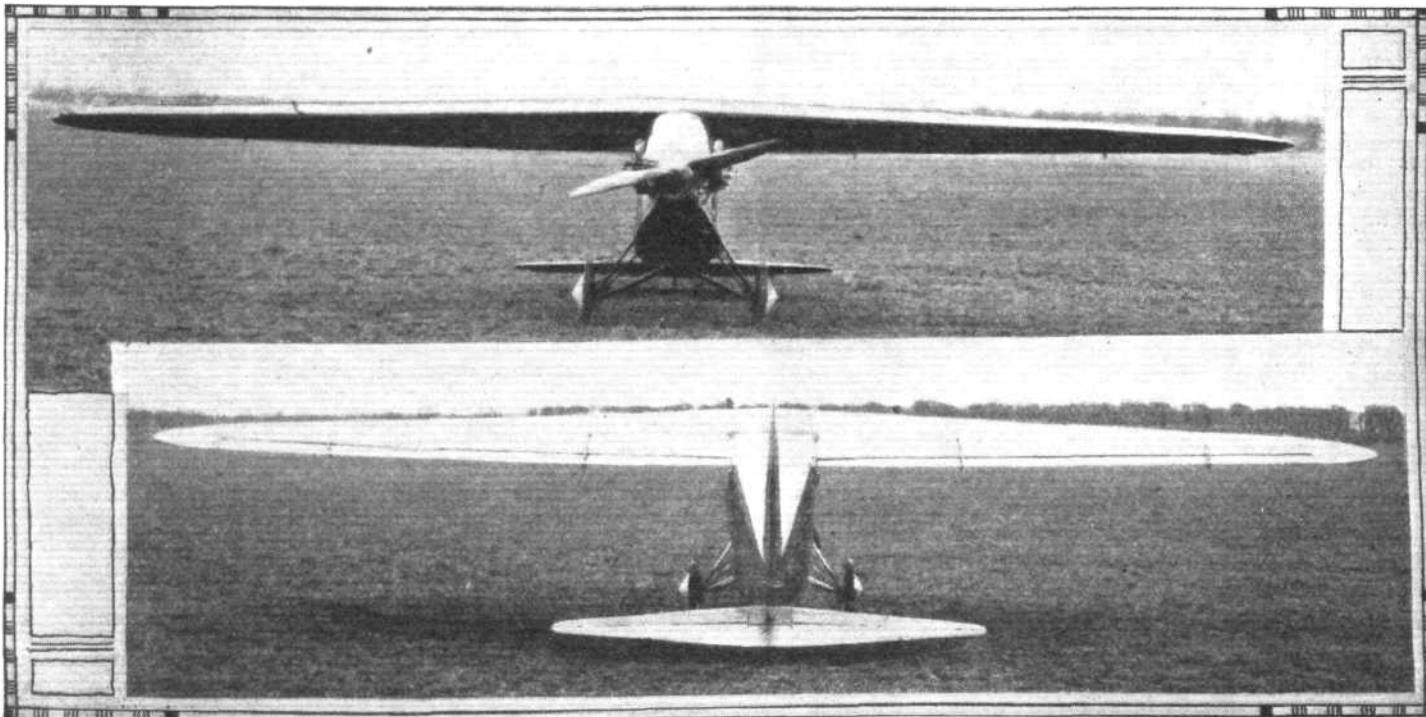


The Mauboussin
P.M.4 Mono-
plane: Side View.
Note the very
short fuselage.

we think it is of interest to note what other countries are doing, and consequently we are publishing this week general arrangement drawings, photographs and descriptive notes dealing with a machine produced in France, and fitted with a British engine, the A.B.C. "Scorpion."

The "P.M. 4" monoplane, which forms the subject of these notes, was designed by M. Pierre Mauboussin and built by M. Louis Peyret, whose tandem monoplane glider won the *Daily Mail* glider competition at Itford some years ago, piloted by M. Maneyrol. Actually, the P.M. 4 was designed

for last year's international light 'plane competition at Orly, and partly to test certain theories of the designer's, who has in contemplation a larger machine of which this may be regarded in some way as a large flying model. The P.M. 4 was not, however, finished in time to take part in the Orly meeting, but it has now been completed and is undergoing tests by the French *Section Technique*. The P.M.4 is a high-wing monoplane, with the pilot enclosed in a small cabin provided with windscreen and side



FRONT AND REAR VIEWS OF THE MAUBOUSSIN P.M.4 : This little French single-seater monoplane is fitted with an A.B.C. "Scorpion" engine.

be a disadvantage, although possibly the relatively large rudder area and high "aspect ratio" of the rudder help to make up for any shortcomings in length of lever arm.

For the rest, the P.M.4 is comparatively orthodox, but characterised by wings of trapezoidal plan form, of large span. The ailerons extend over the whole span (with the exception of the extreme wing tip), and are divided into two portions, of which the outer portion acts as an aileron while the inner portion is used as a camber-varying device.

The monoplane wing, which is in one piece, is of all-wood construction, and has two main spars carrying wooden ribs, the whole being covered with three-ply wood. The wing is attached to the fuselage by four tapering bolts, and as it is a pure cantilever, there are no other attachments. The wing form is rather pretty, and probably very efficient, but would appear to be somewhat expensive to build.

The fuselage is of square cross-section, with a light internal framework and ply-wood covering. Windows in the sides give light and view, while the windscreen in front of the pilot, sloping up to the leading edge of the wing, gives a good view forward, the more so as the extreme nose is dropped and

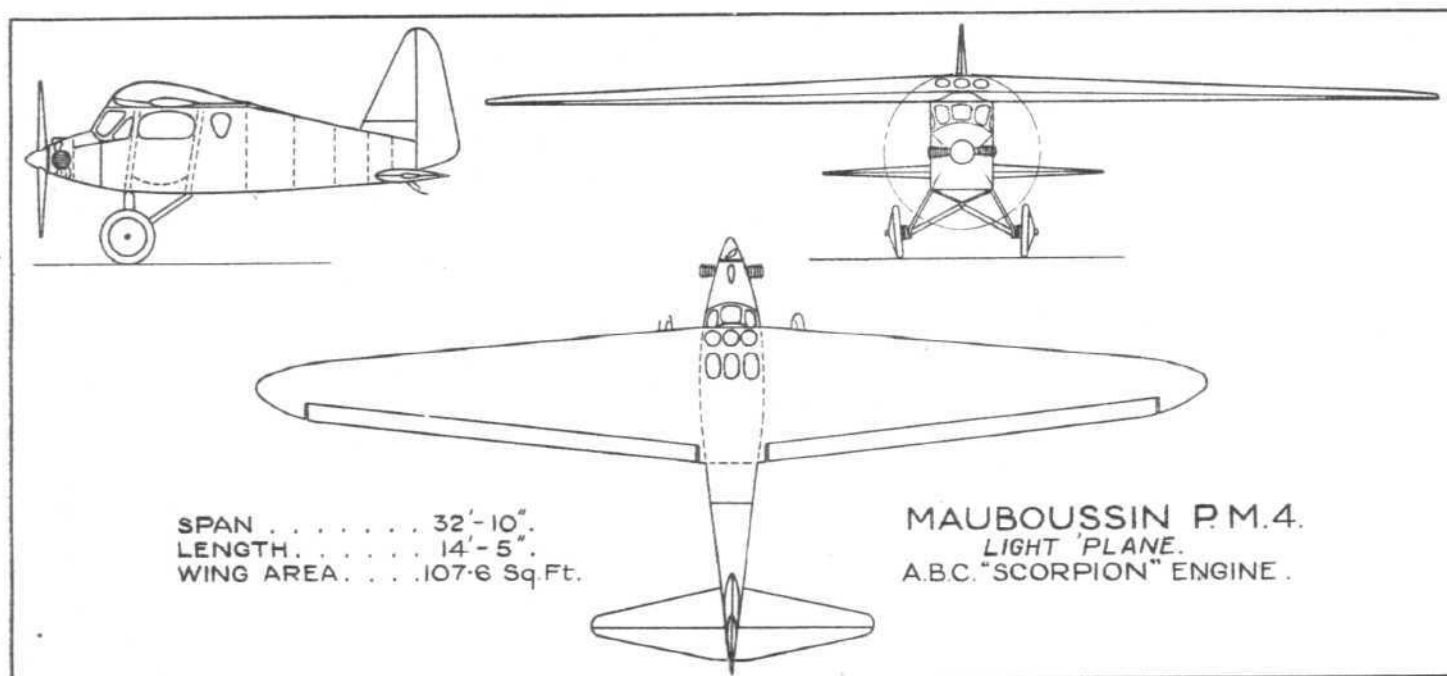
Specification

Following are the main characteristics of the Mauboussin P.M.4:—

Wing span	10 m. (32 ft. 10 in.).
Length, overall	4.40 m. (14 ft. 5 in.).
Height	1.85 m. (6 ft. 1 in.).
Maximum chord	1.5 m. (4 ft. 11 in.).
Wing area	10 m. ² (107.6 sq. ft.).
Engine	A.B.C. "Scorpion."
Normal power	34 b.h.p.
Weight of machine, empty	185 kg. (407 lbs.).
Normal load	115 kg. (253 lbs.).
Normal loaded weight	300 kg. (660 lbs.).
Maximum gross weight	340 kg. (748 lbs.).
Wing loading	30 kg./m. ² (6.13 lb./sq. ft.).
Power loading	8.8 kg./h.p. (19.4 lbs./h.p.).
"Wing Power"	3.4 hp./m. ² (0.315 h.p./sq. ft.).

Estimated Performance

Maximum speed	155 kms./hr. (96.25 m.p.h.).
Climb to 1,500 m. (4,920 ft.)	in 7 mins.
Ceiling	7,000 m. (23,000 ft.).



THE MAUBOUSSIN P.M.4 LIGHT MONOPLANE: General Arrangement Drawings.

the flat-twin arrangement of the A.B.C. "Scorpion" engine results in a smooth deck without obstructions. Behind the pilot's seat is room for mails or luggage. The controls are of normal type, with a "joy stick" for ailerons and elevator and a foot-bar operating the rudder.

The tail surfaces consist of a fixed tail plane, set very low on the fuselage, to which is hinged a one-piece elevator, and of a fixed vertical fin supporting a very tall and rather narrow rudder.

The undercarriage is of the "split" type, with plain rubber cord shock absorbers.

A neat cowling surrounds the central portion of the "Scorpion" engine, and as the petrol tanks are situated in the wing, direct gravity feed is available. A small spinner on the propeller boss serves further to streamline the "nose" which looks fairly "clean."

During actual trials, the top speed did not reach more than 147 kms./hr. (91.25 m.p.h.), but the propeller fitted on this occasion was not quite suitable, and reduced the engine speed to 2,150 r.p.m., which would correspond to about 31.5 b.h.p. With the new propeller being produced, the engine speed should go up to 2,550 r.p.m., and allow the engine to develop 38 b.h.p. On climbing tests, a height of 1,000 m. (3,280 ft.) was reached in 5 mins. 25 secs., and an altitude of 2,000 m. (6,560 ft.) in 12 mins. 5 secs. Even these figures, however, are by no means bad, and the P.M.4 appears to be a very efficient little machine. Until further performance figures are available, there is little purpose in calculating the "Everling Quantities." It is of interest to note, however, that the top speed actually attained, assuming the engine to have developed 31.5 b.h.p., gives a "high-speed," figure $\frac{\eta}{2k_D}$ of 18.5, which is quite good.

Flying Near Bognor

A NOTICE to Airmen issued on February 11 states that during the residence of His Majesty the King at Craigwell House, Bognor, all pilots should refrain from flying within four miles of Craigwell House, which is situated one mile to the west of Bognor.

Leader of Far East Flight Returns

GROUP CAPTAIN H. M. CAVE-BROWNE-CAVE, the R.A.F. Officer who commanded the Far-East Flight of four R.A.F. Supermarine "Southampton" (Napier) flying-boats which started from Plymouth in October, 1927, and flew at least 27,000 miles, returned to England on February 8 to report to the Air Ministry. He was welcomed at Liverpool Street Station by his brother, Wing Commander T. R. Cave-Browne-

Cave, Air Vice-Marshal Sir Vyell Vyvyan, Maj. J. S. Buchanan and Maj. O. E. Villiers, of the Air Ministry, Capt. D. Acland, representing the Society of British Aircraft Constructors, Group-Capt. W. F. MacNeece Foster, representing the Air Council, and Capt. W. T. S. Williams, representing the Air League of the British Empire. The four flying-boats are now at Singapore, where they will be stationed permanently.

R.A.F. African Flight

THE R.A.F. Fairey-Napier machines left Cairo on February 12 for the annual flight down the African continent to Cape Town and back. They are commanded by Sqdr.-Ldr. F. J. Vincent and the personnel are drawn from No. 45 Squadron stationed at Helwan. The programme provides the arrival at Cape Town on March 14.

Royal Air Force Far East Flight

under command of
Group Capt. Cave-Browne-Cave

Total engine miles:

180,800

THE flight was carried out with four Supermarine - Napier "Southampton" flying boats, each fitted with two Napier Lion engines.

Extracts from Official Report

"The same crews, aircraft, engines, etc., which had flown from England were used throughout this cruise from Singapore, round Australia and back to Singapore."

"The aircraft and engines of the flight have all been most satisfactory, they have given no trouble of any consequence and have caused no forced landings, only very minor replacements have been necessary and they are still in very good condition."

"Each engine has completed over 300 hours flying."

NAPIER

The finest aero engine in the World

D. NAPIER & SON LTD.

ACTON · LONDON

W. 3

Save time by using the Air Mail.



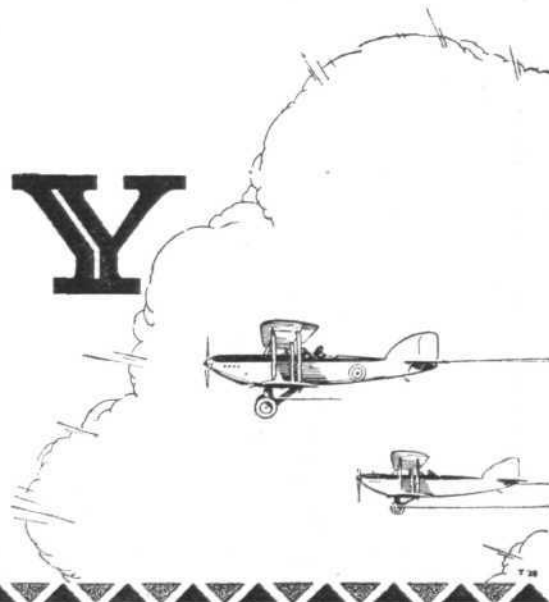
4

DIFFERENT ENGINE INSTALLATIONS

The extensive adaptability of the Fairey III.F. aircraft is already well-known. The photograph above, however, shows this adaptability extended to a still further degree, by the variety of engines that can be installed, each III.F. aircraft being fitted with a different type of engine, namely, Napier "Lion" XI, Rolls-Royce "F" type, Bristol "Jupiter" VIII, and the Lorraine 12 Ed. The general utility and high efficiency of the Fairey III.F. is already confirmed by the large numbers in use with the Royal Air Force at home and overseas, and with the Air Forces of the Dominions, and of Foreign Governments.

FAIREY AIRCRAFT

THE FAIREY AVIATION COMPANY, LIMITED,
Head Office and Works: HAYES, MIDDLESEX.



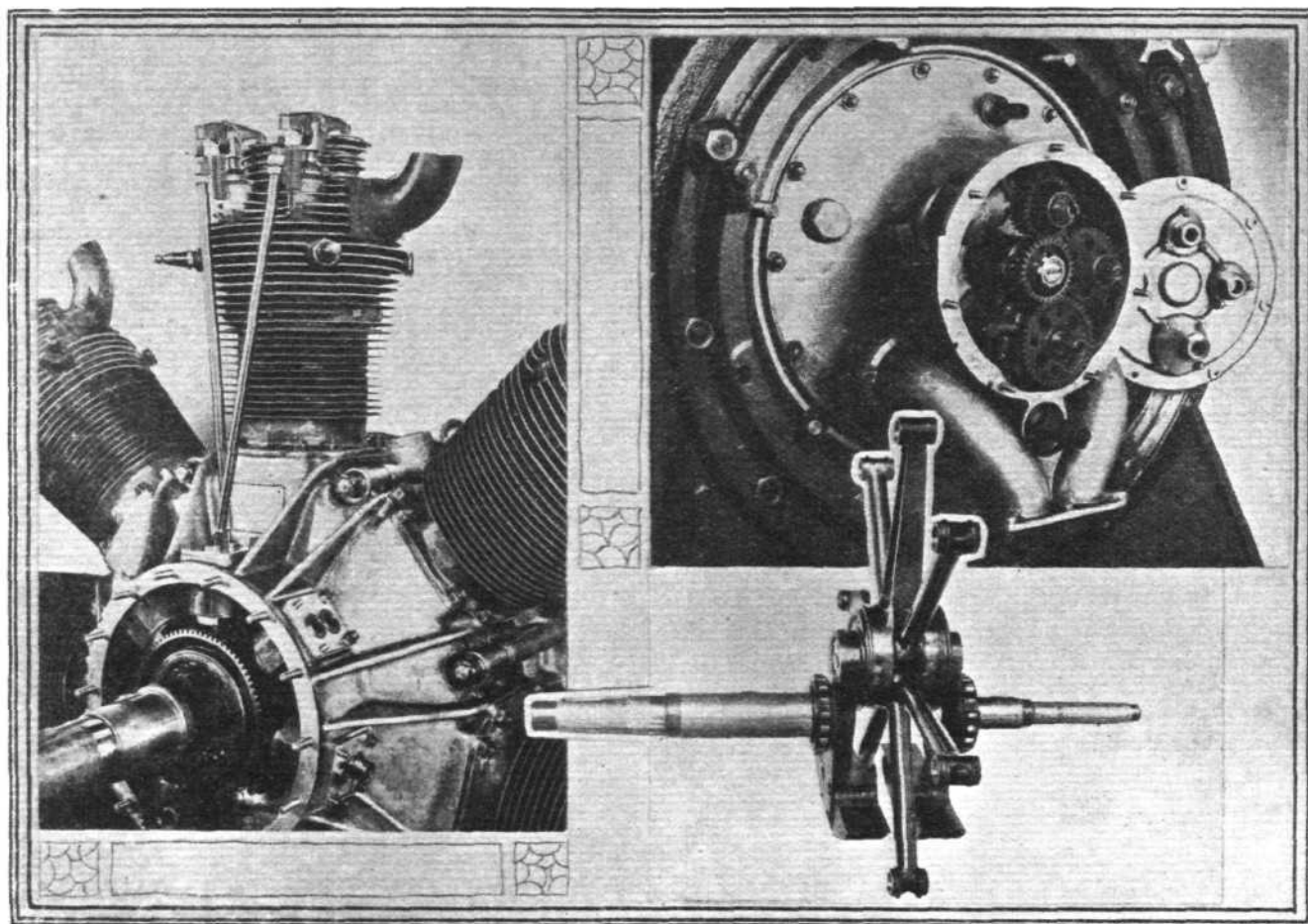
Kindly mention "Flight" when corresponding with advertisers.

THE 240-H.P. WALTER-CASTOR AERO ENGINE

A Czecho-Slovak Air-Cooled Radial

THE well-known Czecho-Slovak Aero Engine firm of Walter A. Spol. of Prague—who have already produced several types (60 h.p., 85 h.p., 120 h.p., 420 h.p. and 600 h.p.) of air-cooled radial engines for aircraft, recently added yet another model to their range. This new engine, one of medium

Like previous Walter engines, this new model is an air-cooled radial, with seven cylinders, 135 mm. (5.3 in.) bore by 170 mm. (6.7 in.) stroke. The cylinders are made from the solid block of forged steel, with the cooling fins and bottom flange machined. The tops of the cylinders are also

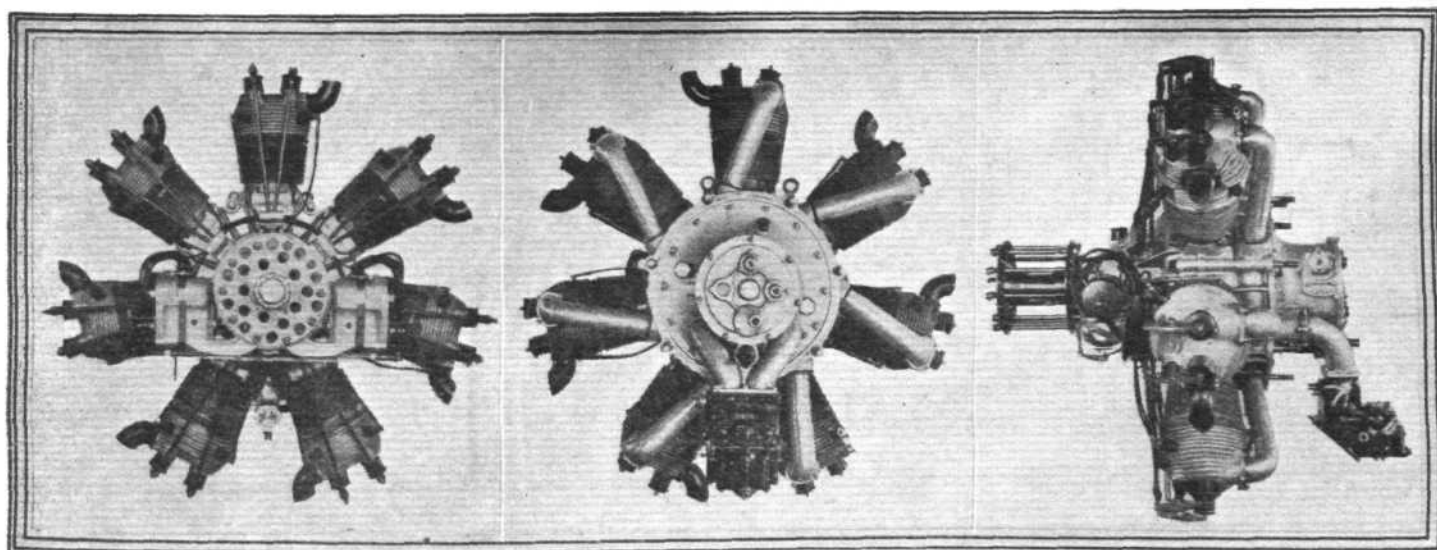


THE 240 H.P. WALTER-CASTOR ENGINE: Some constructional details showing the valve gear (left), auxiliary gears and crank-shaft assembly (right).

power (*i.e.*, 240 h.p.), was recently tested under the supervision of a committee of Public Works, having successfully passed the tests according to the international rules of the C.I.N.A. We are able this week to give a brief description with illustrations of this engine.

machined to receive the separate cylinder heads. It may be of interest to note that all the steels used in the construction of Walter engines are made by the well-known Poldi Steel Foundries.

The cylinder heads are of aluminium, thermally treated.



THE 240 H.P. WALTER-CASTOR ENGINE: Three views of the new model recently added to the wide range (60 h.p.—600 h.p.) of air-cooled radial engines produced by the well-known Czecho-Slovak firm.

and are screwed on to the cylinders by a special arrangement, forming a patent of the company, each head being interchangeable. The valve seats are of bronze, pressed into the heads, and the valves are operated through rocker arms and push rods, each valve being provided with three concentric springs and one return spring on the push rod. The valves themselves are made of special Wolfram steel.

Pistons of special heat-treated aluminium alloy, with domed heads and strengthening ribs, are employed; each piston has two rings and one scraper ring. The connecting rod system comprises a master rod and six auxiliary rods; the former is made of H-section nickel-chrome steel, and the latter are tubular. The big end is of the same type that has given such successful results on other Walter engines, and consists of a double roller bearing with a space between for the auxiliary rods. The latter are carefully balanced to ensure even running.

The crankshaft, of Poldi-Victrix steel, is built up in two parts, with counterbalance weights on each part, and is supported by two roller bearings, propeller thrust being taken by a thrust bearing in the front crankcase cover; there is also an auxiliary roller bearing carrying the tail-shaft.

The crankcase is of the barrel type, divided circumferentially, with end covers. The steel bolts securing the two parts of the crankcase also serve for the attachment of the engine in the engine mounting of the machine. The front part of the crankcase houses the cam disc, which has cams in two rows; four front cams operate the exhaust valves, while four rear cams operate the inlet valves. The cam disc is driven through a layshaft by spur gearing.

A Zenith 60 D.C.J. double carburettor is fitted, this being

mounted on the rear crankcase cover, and supplying mixture to a chamber formed by the side of the rear half of the crankcase and its cover. In this chamber is a centrifugal fan, driven directly by the crankshaft, which assures an even mixture being distributed to the cylinders. The mixture is led from this chamber to the cylinders through seven radiating induction pipes; the chamber, together with the carburettor, are heated by the warm oil from the engine.

Lubrication is of the dry sump type, with two gear pumps, mounted on the lower part of the rear half of the crankcase and driven by spur gear from the crankshaft. Oil is collected in a sump located at the lowest part of the crankcase, and returned by the pump to the oil tank *via* a filter and carburettor and mixture chamber heater jackets.

Ignition is by two Bosch G.F.7 (or two Scintilla G.N.7) magnetos mounted on brackets cast on the front cover, below the crankshaft, and are driven through bevel gear from the cam gear layshaft.

Auxiliary transmissions, for petrol pump, r.p.m. indicator, starter, etc., are all located in the rear crankcase cover, where they are completely enclosed and separated from the rest of the crankcase.

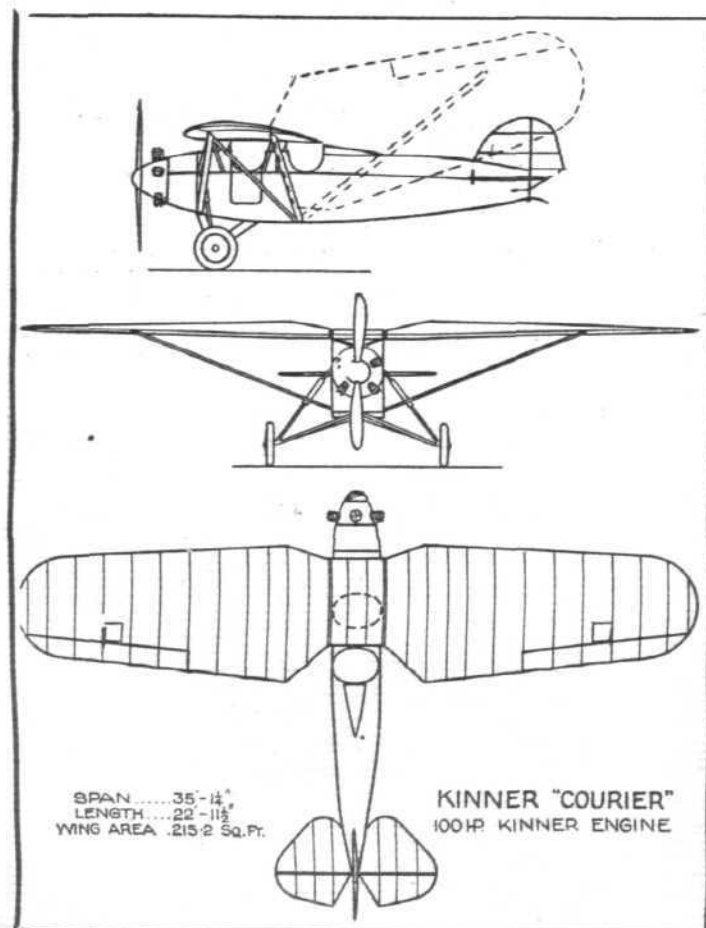
The principal characteristics of the 240 h.p. Walter-Castor are:—

No. of cylinders	7
Bore	135 mm. (5.3 in.)
Stroke	170 mm. (6.7 in.)
Compression ratio	6 : 1
Normal h.p. and speed	240 at 1,750 r.p.m.
Maximum h.p. and speed	260 at 1,850 r.p.m.
Weight with propeller hub	248 kg. (546.8 lbs.)

AEROPLANE TYPES

THE KINNER "COURIER"

A TWO-OR-THREE-SEATER "parasol" type monoplane, for commercial or sporting purposes, constructed by the Kinner Airplane & Motor Corp., of Glendale, Calif., U.S.A.



THE KINNER "COURIER": General arrangement drawings.

Special features.—Folding tapered wings; choice of open or closed cockpits.

Power plant.—100-h.p. Kinner K.5 5-cyl. air-cooled radial.

Wings.—Of standard wood construction, tapering to the tips and also sharply tapered at the roots to a small centre section. Modified (Kinner) U.S.A. 27 wing section is employed. The rear spar of each wing is pivoted on the centre section, and in folding, the front spars are unfastened, the front bracing struts removed, and the wings allowed to pivot with the leading edge downwards. The wings then fold back along the fuselage, being supported by the hinged rear struts.

Tail Surfaces are of unbalanced type, with adjustable horizontal stabiliser.

Fuselage.—Is of standard welded steel tube construction with swinging engine mount. The front, or passenger's, cockpit has the left side cut away for a door.

Undercarriage.—Non-axle type, each wheel being mounted on a V attached to the bottom of the fuselage, while the shocks are taken by absorber members extending up to the top longerons of the fuselage.

Specification.—

Span	35 ft. 11 in. (10.7 m.).
Length	22 ft. 11 1/2 in. (7 m.).
Height	7 ft. (2.1 m.).
Wing Area	215.2 sq. ft. (20 m. ²).
Aileron Area	14 sq. ft. (1.3 m. ²).
Stabiliser Area	14 sq. ft. (1.3 m. ²).
Elevator area	8 sq. ft. (0.74 m. ²).
Fin area	4 sq. ft. (0.37 m. ²).
Rudder area	4 sq. ft. (0.37 m. ²).
Weight, empty	915 lbs. (415 kg.).
Useful load	550 lbs. (249.5 kg.).
Total weight	1,465 lbs. (664.5 kg.).
High speed	120 m.p.h. (193 k.p.h.).
Low speed	35 m.p.h. (56 k.p.h.).
Cruising speed	110 m.p.h. (177 k.p.h.).
Climb	900 ft./min. (274 m./min.).
Ceiling	20,000 ft. (609.6 m.).
Cruising range	800 miles (1,287 km.).
Petrol consumption	7 gals./hr.
Oil consumption	2.5 pts./hr.



A.B.C. AERO ENGINES

Specially designed for Light Aeroplanes. Type tested and Approved by the British Air Ministry. Perfect balance, efficient cooling, economical running and Interchangeability of Units and Parts between both Engines, are Leading Features.

"Hornet."

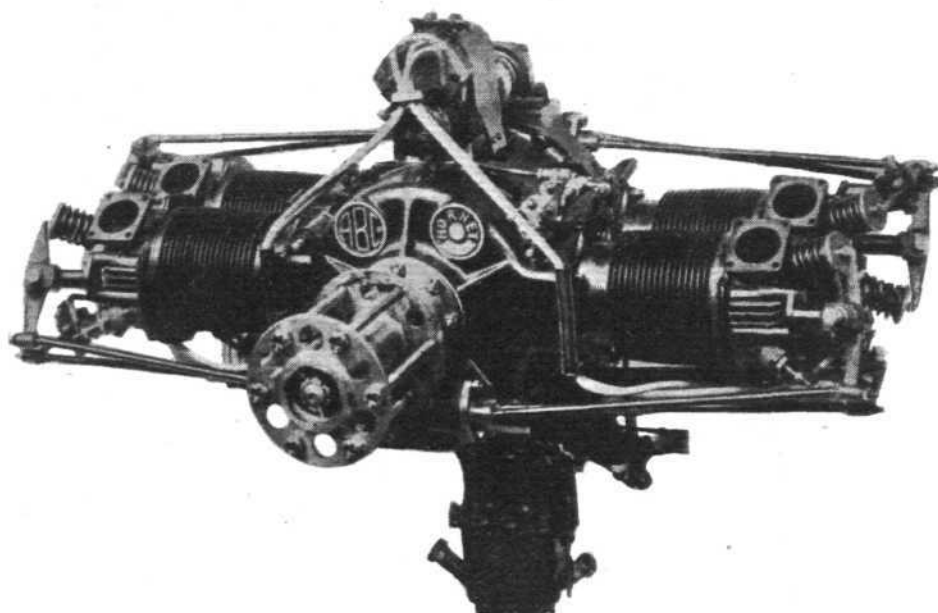
Power.

Normal, 75 B.H.P. at 1,875 R.P.M.
Maximum, 82 " " 2,175 "

Consumption.

Petrol - - 0.53 Pts. B.H.P./Hr.
Oil - - 0.035 " "

Weight complete, 225 lbs.



"Scorpion II."

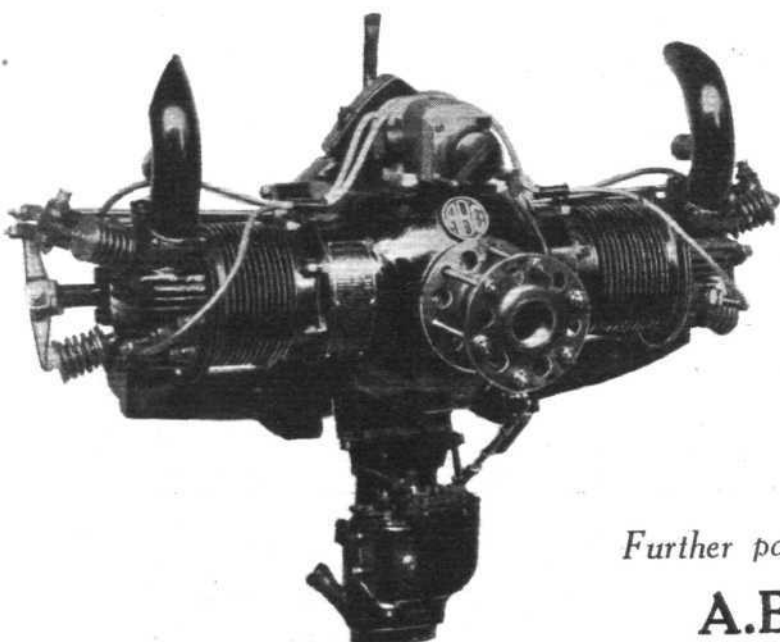
Power.

Normal, 35 B.H.P. at 2,300 R.P.M.
Maximum, 40 " " 2,750 "

Consumption.

Petrol - - 0.52 Pts. B.H.P./Hr.
Oil - - 0.04 " "

Weight complete, 110 lbs.



Further particulars from

A.B.C. MOTORS LTD.,
Walton-on-Thames, Surrey, England.

'Phone : 774/5 } Walton-
'Grams : Revs } on-Thames.

Save time by using the Air Mail.

**150 MILES AN HOUR
TO BELFAST.**

**JOYS OF THE TRIP IN THE
FLYING BOAT.**

GLORIOUS!

An Evening who was on board the flying boat, Calcutta, first Liverpool. The Calcutta and rose in the River Mersey, with ears popping as, with ears popping to deaden the engines' propeller ward at a height like an arrow, 100 miles an hour. The strode



**THE SCOTTISH ISLANDS
BY AIR.**

SHORT CALCUTTA

**SUCCESSFUL DEMONSTRATION ON
THE THAMES.**

**SIR ERIC GEDDES'S FLYING
BOAT CRUISE.**

The Short Calcutta, the new Empire flying-boat seating 15 passengers in complete comfort, has now been handed over to Imperial Airways for use on the South-Atlantic route.

The new Empire flying-boat, which will operate over the Mediterranean, has been chartered by its chairman, Sir Eric Geddes, for a days' pleasure cruise on the board of Great Britain. The boat, which has three, will take as guests his three sons, Sir A. Isobel Goring, Miss J. Colonel and Mrs. F. R. I will leave Imperial Airways flying via Weymouth arrive at Tenby at 10.15. Anglessea is due.

A TRIP IN THE "CALCUTTA."

To Guernsey by A.

SHORT CALCUTTA

ALL METAL FLYING BOAT

Bristol "Jupiter" Engines

An order for a third all-metal "Calcutta" has been placed by Imperial Airways

SHORT BROS. (ROCHESTER & BEDFORD) LTD., ROCHESTER

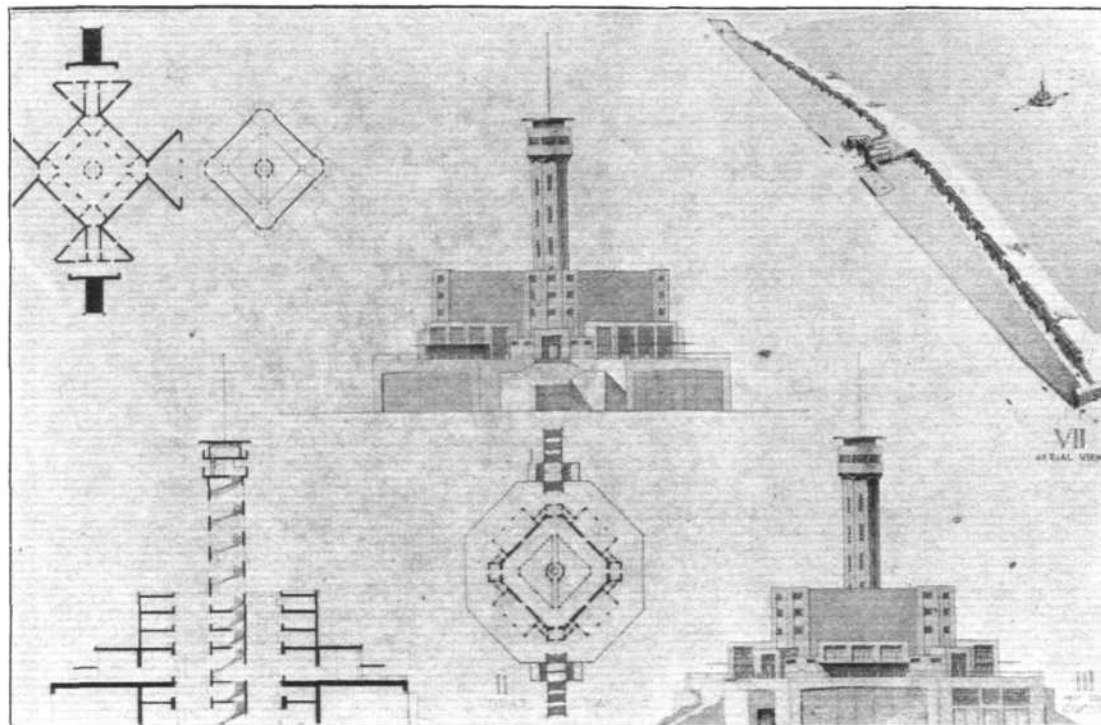
Kindly mention "Flight" when corresponding with advertisers.

FUTURE LONDON AIR PORTS

THE two air port plans which illustrate this article were successful, with the plan by Mr. D. H. McMorran, in the competition recently organised by the Royal Institute of British Architects for prizes totalling £200 given by the Directors of the Gloster Aircraft Co., Ltd., and Messrs. H. H. Martyn and Co., Ltd., to stimulate architectural ideas on the subject of the requirements of aircraft in fifteen

main buildings, control tower, hotel, administrative offices, etc., were in a line stretched across the extreme end of the site, whilst in front a series of hangars described a neat arc. The remainder of the ground was entirely free for aircraft.

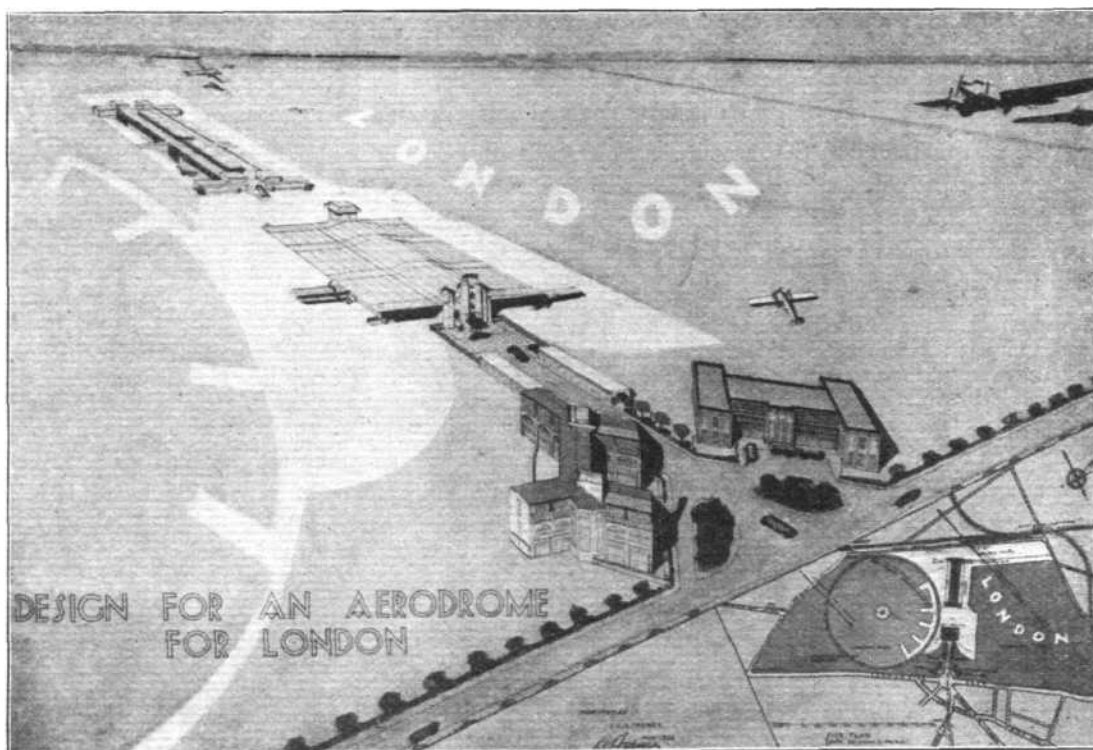
Mr. Hartland Thomas also gets a neat effect in his scheme, but his control tower is located in the centre



Mr. M. Hartland Thomas's plan (with sections of the control tower) for a future London air port. He shared the first place with Mr. D. H. McMorran and received £62 10s.

Mr. L. C. S. Farmer's plan for a future London air port, which won him second prize, £25, in the competition.

["FLIGHT" Photographs]



years' time. We published more detailed particulars of the competition on January 31 last, with a photograph of Mr. McMorran's plan. He and Mr. M. Hartland Thomas shared the first prize of £125, and Mr. L. C. S. Farmer won the second prize of £25.

There was an attractive simplicity and architectural economy in Mr. McMorran's scheme. The ideas that actuated him almost spoke for themselves on the plan. Clearly he resolved to give as great an area, free of the smallest obstruction, for the movement of aircraft. His

of the field, as will be seen by the general view in the right-hand corner of his plan on this page. His other buildings range in one line along the edge of the field. Communication between them and the control tower, which houses the meteorological and other offices, also hangars, is made by a sunk road, which also stretches right across the field.

Mr. L. C. S. Farmer divides the aerodrome with a road at right angles and ranges his buildings along it. One side of the aerodrome would be allocated to aircraft arriving, and the other side to aircraft departing.

EDDIES

As a relic of "speed," in the not very long ago, at least one of the last of the twelve existing hansom cabs might well find a resting place in the London Museum. Advance following advance in speed, the sequence of tubes, motor-cars, taxis and even trams in their turn, has during the last thirty years gradually but remorselessly wiped out the once so-called swift London "gondola"—otherwise the London hansom. With the ever-increasing speed of aircraft the limit must have been about reached, and therefore with Finality and just the round dozen, so far as record can trace of these once comfortable fiacres, left, it would be regrettable if this emblem of speed in the past century should become obsolete.

THAT murder in Paris of Delattre, who appears to have been anxious to import some German secret method of stopping aeroplanes when in the air, is sufficiently mysterious to excite the envy even of Edgar Wallace. There are all the elements of a thrilling story in the screed said to have been left behind by Delattre and found near his body, to the effect that "I told them I would give them my documents for nothing if necessary, and if anything happens to me you will know it is ——— who has struck the blow." It appears that for some days the murdered man was followed by "secret service men," and where E. W. should come in would be in wrapping up until the last chapter the nationality and identity of the fitting secret service men, who, it is inferred, are responsible for the outrage.

It is to be hoped the French authorities will not raise their present ban upon the East to West Atlantic flying without they first satisfy themselves all reasonable provision against untoward possibilities have been provided for. It would then be time enough for the courageous men who are said to be preparing for the venture to take their chance in this great handicap. Amongst the optimistic ones who are in favour of these flights are said to be Capt. Fonck, Capt. Coste, Lieut. Paris, M. Berliet, Jun., and several other prominent men.

It is to be hoped the Sultan of Zanzibar, when he visits various points of interest in England as the guest of the British Government in May next, will have an insight and convincing proof of the promise of aircraft in the development of his country, not only from the Service point of view, but into the wonderful operations which are going on in the works of some of our great aviation firms. It should be distinctly helpful to the industry.

How satisfactorily is the League of Nations "will for peace" working out? The wonderful moral effect of this ideal body emerges once again in the evident growing desire for "peaceful" control of the Mediterranean, as between Italy and France, England, of course, standing by, ever watchful to see that British trade interests are not interfered with. Although the main efforts are apparently directed through the Navy Estimates in both the French and Italian programmes, the aircraft forces are becoming a very important factor having regard to the very hazardous position which their rapid multiplication constitutes for the slow-moving battleship. Both powers are relying ultimately upon this phase of control, Italy at present apparently claiming to have the lead in all respects. Of course, each country blames the other for this rivalry state of affairs, and what one would like to know is when the good offices of the League are likely to start.

THE aeroplane is responsible for another good deed to humanity. Owing to a recent flood, the inhabitants of Independence, Kansas, were cut off for four days, and the people were clamouring for bread, which the bakers were unable to supply because of the lack of yeast. And so a National Air Transport mail 'plane was chartered to fly a supply of yeast to the town. Pilot Harry Lewis, who flies the night air mail for N.A.T. between Chicago and Kansas City, made the round trip of 280 miles between Kansas City and Independence, in 3 hrs. 15 mins. flying time, and landed in a hayfield six miles west of Independence, as the city airport was mandated.

Self-raising flour!

Also, did Pilot Lewis make any rolls during his trip?

ALTHOUGH it is only in more recent years aircraft have taken a hand in Polar Exploration, this side of the great

venture is likely to at last lead to a successful issue of the objects sought, whether it be a North or the South Pole expedition. Representatives at the reunion the other day of thirty-four Antarctic explorers, survivors, in this country, of nine Antarctic and two relief expeditions, dating back from 1898, naturally did not include a list of aviation representatives, but at the next gathering of these intrepid men it is more than likely that this side of the ventures will more than justify itself.

THE primary object of the gathering at the Café Royal was the inauguration of an Antarctic Dinner Club, Engineer Vice-Admiral R. V. Skelton, D.S.O., who was chief engineer in the "Discovery" (1901-4), presiding. A very wonderful company assembled in support of their chairman and embraced only participants in Antarctic exploration, including representatives of the "Southern Cross" (1898-9), "Discovery" (1901-4), "Morning" (1902-4) and "Terra Nova" (1903-4), (relief ships to "Discovery"), "Scotia" (1902), "Nimrod" (1907-9), "Terra Nova" (1910-13), "Aurora" (1911), "Endurance" (1914), "Quest" (1921), and "Graham Land" (1921).

THAT the idea of the club is of an intimately personal character may be judged by an excellent example in after-dinner oratory, which might well be followed with great advantage and immense relief with nine out of every ten after-dinner speeches. This pleasurable innovation was confining the toasts to "The King," the chairman then "drinking" a glass of wine with the members of each of the expeditions in chronological order.

MR. EVERYMAN DRAGE'S system has now taken to itself the realm of aviation in America. According to the *Daily Telegraph* New York correspondent, the tremendously increased interest in aeronautics displayed in the United States is bringing this about, and the steady production of American factories has resulted in facilities being provided for the supply of flying machines on the hire purchase system. Evidence that demonstrates Americans are taking aviation now very seriously.

WHICH reminds me, that an old pioneer friend here—to wit, Warren Merriam—is already prepared to give similar "pay as you go" assistance in regard to aircraft.

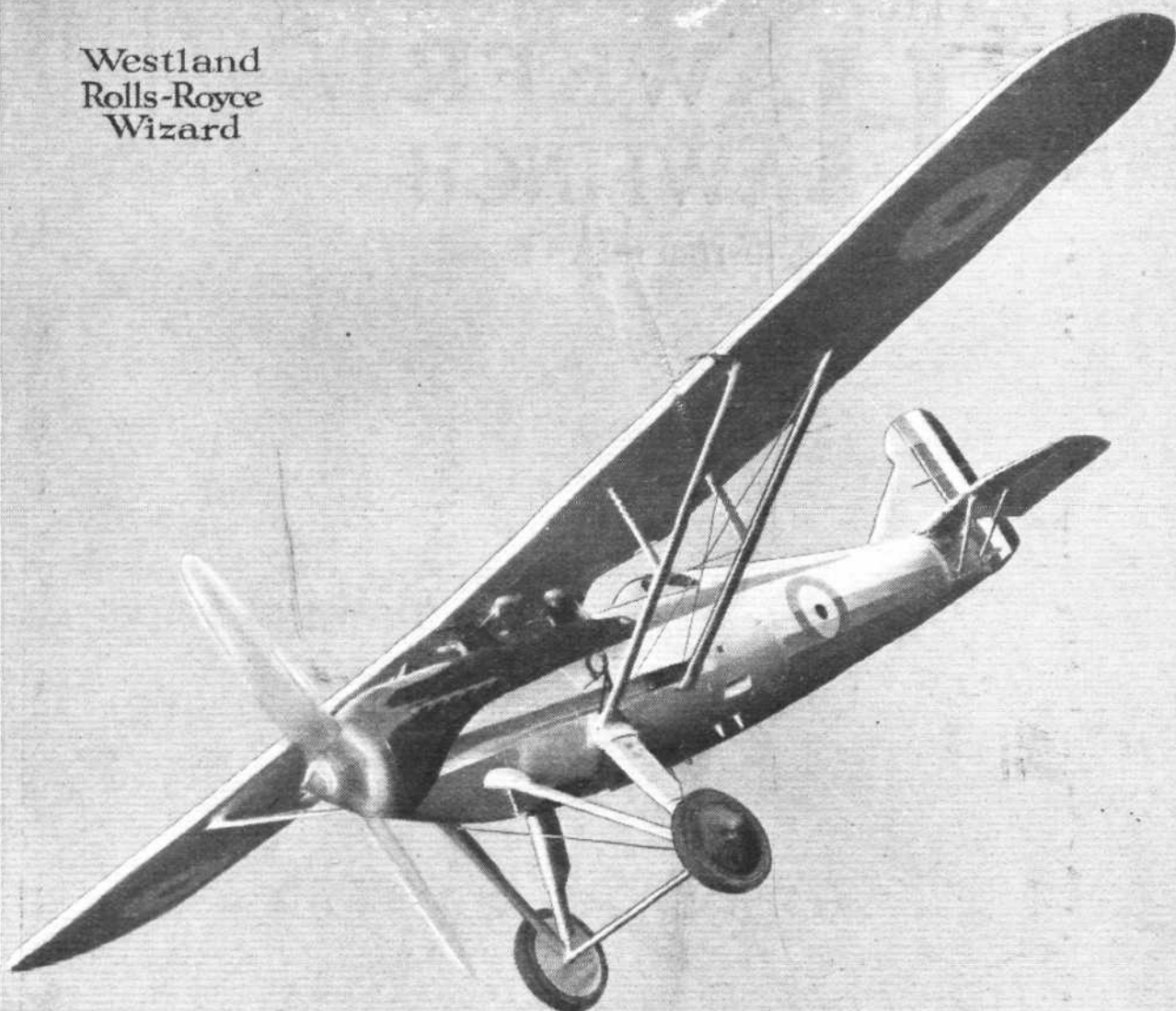
It is difficult this side for the plain man in the street to follow or understand the working of the American political machine, especially at Presidential election time. But apparently one form it takes is embittered discussion regarding their Navy Bill, into which the very vital question of aviation enters very prominently. Dealing with the "voices" in the States, Mr. Edward Marshall in the *Daily Telegraph* summarises this aspect by saying that national thought is fascinated by the continual unfolding panorama of aeronautical progression. It is freely predicted that long before much more than the preliminary 12 millions, with which the Navy Bill deals, has been spent, far-sighted experts will have brought irresistible influence to bear on reducing steel ships and increasing aeronautical expenditure. Which conclusion should be a further very good reason for Great Britain being wise in time and acting accordingly.

ON the other hand a sense of proportion should be observed, as it is acknowledged at Washington apparently that the existing aircraft carriers *Lexington* and *Saratoga* are so costly to run that they may have to be laid up. In fact it appears that the Chairman of the U.S. Appropriation Subcommittee on Naval Finances is in favour of withdrawing these 33,000-ton warships from active service.

OUR hats off to our well-balanced contemporary the *Observer* for its usual regard for decency in journalism, in giving a single general view photograph only of our greatly beloved King leaving Buckingham Palace on Saturday in the ambulance which every member of the community prays has conveyed him on the first stage to complete convalescence. What a contrast to, under the circumstances, some of the ghastly abhorrent photographs prominent in other Sunday publications of "close-ups" of the King as seen in the ambulance. Can Sunday "yellow" journalism go further?

AEOLUS

Westland
Rolls-Royce
Wizard



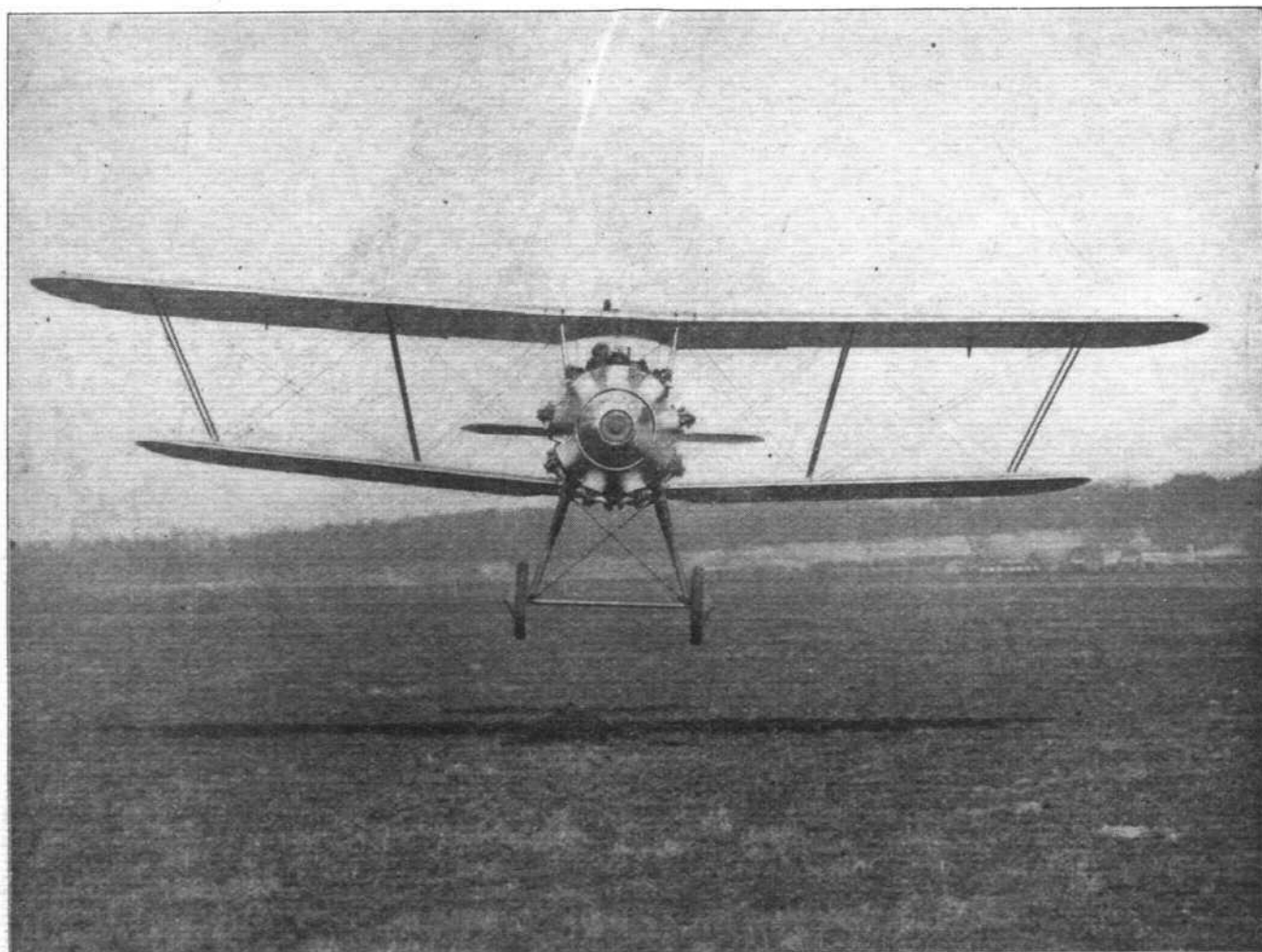
ROLLS-ROYCE

AERO ENGINES

ROLLS-ROYCE LTD. 14-15 CONDUIT ST. LONDON, W.1.

THE **HAWKER** **AWFINCH**

with JUPITER Mk. VII Engine.



[“FLIGHT” Photograph]

A single-seater fighter of outstanding merit incorporating the Hawker patent system of metal construction.

THE
H. G. HAWKER ENGINEERING CO., LTD.

Specialists in Military Aircraft.

Works :
KINGSTON.

Aerodrome :
BROOKLANDS.



Telephone :
KINGSTON 6272 (4 lines)

Cables :
“HAWKER, KINGSTON.”

Kindly mention “Flight” when corresponding with advertisers.

PRIVATE FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

THE SUFFOLK CLUB'S WELCOME TO THE HON. LADY BAILEY

THE Hon. Lady Bailey was welcomed by the Suffolk and Eastern Counties Aeroplane Club, of which she is President, on February 7. It was arranged that Lady Bailey should fly down from London during the day and open the new clubhouse. Mr. Courtney N. Prentice and Dr. James C. Sleigh, of the Suffolk Club, each left Hadleigh at mid-day in the Club's Blackburn "Bluebirds" (Armstrong-Siddeley "Genet" engines) with passengers to meet Lady Bailey and escort her to the aerodrome, but they returned alone after a considerable flight and reported thick weather. Meanwhile Lady Bailey had left Stag Lane in her Cirrus-Moth,

pride in that it was accomplished by their president. But he did not think he could say they had taken any more pride than other people had done all over the country. The achievement had been marked by the grant of the International Aeronautical Association medal, a recognition of Lady Bailey as the champion airwoman. It was the second year in succession that she had won that medal.

Some of them, continued the speaker, had started on cross-country flights, got lost, come down to a railway station, and found where they were. Lady Bailey had worked on a map of 1 in. to 100 or 200 miles, with no railway stations, but



["FLIGHT" Photographs]

SUFFOLK AND EASTERN COUNTIES AEROPLANE CLUB : In the group on the left are (left to right) Mrs. H. L. Billinton, Mrs. James C. Sleigh, Mrs. Courtney N. Prentice and Mr. Courtney N. Prentice. On the right are (left to right) Mr. G. E. Lowdell, A.F.M. instructor pilot, Mr. H. L. Billinton, a director, and Maj. P. L. Holmes, D.S.C., the secretary. In the centre picture is Dr. James C. Sleigh, the chairman. The machines are Blackburn "Bluebirds" (Armstrong-Siddeley "Genet" engines).

but was obliged to descend owing to fog. Later another attempt was made and a detour round south London tried to escape the fog belt but the conditions were the same everywhere in the locality, and very wisely Lady Bailey decided to land at Croydon. She could only see a ground patch immediately below.

Late in the afternoon Lady Bailey reached Ipswich by car and was the guest of the Club at a dinner at the Great White Horse Hotel which was followed by a dance. There was a company of over 150 to welcome her. Dr. Sleigh, chairman of the club, presided, and the Mayor (Dr. J. F. C. Hossack) was also present. In his speech Dr. Sleigh said that Lady Bailey's African flight was certainly one of the most important ever made, and they of the Suffolk Club took a natural

she got to her destination. It was a flight exceptional for many reasons. Did it not show the great advance flying had made during the last ten years? It was a great achievement by the pilot and the machine.

He recalled how they secured Lady Bailey as president at a time when the club met in a small room. She had brought it prestige and the club certainly progressed. Clubs like theirs had been formed to teach people to fly and obviously had great use.

Lady Bailey then thanked the company for the reception and expressed her pleasure at the great improvement and wonderful progress they had been able to record whilst she had been away. At the beginning of the club she had thought that not a great deal of confidence was being shown in that part

of the country, but from the progress made a great deal more confidence would be established. Lady Bailey then traced the course taken during the flight round the African Continent and described the changing nature of the country and also commented upon the possibilities of air transport. She thought that aviation was going to open up the Continent, and mentioned that the Belgians were going ahead tremendously in the Congo.

Mr. Courtney N. Prentice then honoured "The Norfolk and Norwich and Kindred Clubs." Mr. A. A. Rice of the Norwich Club responded and joined in the expression of appreciation of Lady Bailey's wonderful flight. They took a pride in the achievement Norfolk way, he said, because Lady Bailey's first cross-country flight was from Mousehold Aerodrome. Flying clubs had their ups and downs and he read that there was a little anxiety with flying clubs as to the new (Guest) scheme.* It was premature to discuss it, but he felt, as far as East Anglia was concerned, the Government would see them through. He thought their two clubs could point

in September, the figure being 80 hrs. In January this year, 69 hrs. 25 mins., were completed. Flying at Hadleigh takes place every Tuesday, Wednesday, Saturday and Sunday, weather permitting. A large hangar, clubhouse and fuelling station have been created now, and there are always adequate arrangements for the arrival of air visitors, who, in fact, are welcomed.

Major P. L. Holmes, D.S.C., who is the club secretary, has his office adjoining the field, and telephone communication can be made with him there. Visitors can obtain lunch as well as fuel.

At Conington, near Cambridge, a branch of the club has been established for some time, instruction taking place each Monday and Thursday on the Blackburn "Bluebird" which is flown over from Hadleigh. The district offers wide scope for expansion of the branch and it will not be long before a Blackburn "Bluebird" will be kept there permanently with an instructor.

The seaplane branch will start at Brightlingsea, which is on



["FLIGHT" Photograph]

HADLEIGH AERODROME, SUFFOLK : The new clubhouse (right) and large new hangar which have been erected at Hadleigh Aerodrome by the Suffolk and Eastern Counties Aeroplane Club. Two of the Club's Blackburn "Bluebirds" (Armstrong-Siddeley "Genet" engines) are in the background.

to as good a record as any in the country; he congratulated the Suffolk Club on its progress.

Mr. Arthur Ll. Edwards proposed the toast of the "Mayor and Corporation," and in the course of his remarks he spoke in terms of praise of the skill of Mr. G. E. Lowdell, A.F.M., the Suffolk Club's instructor pilot.

The Mayor (Dr. Hossack) responded and mentioned, on the question as to whether Ipswich should mark areas for future aerodromes, that in his personal opinion the day was not far distant when something would have to be done in this respect.

The Club's Record

Last year the Suffolk and Eastern Counties Aeroplane Club accumulated 600 hours' flying time with their three Blackburn "Bluebird" light aeroplanes, fitted with Armstrong-Siddeley "Genet" radial engines, and they never suffered one forced landing through engine trouble. Twelve members were trained *ab initio* for the "A" licence, and since last Easter, when a most successful air meeting was organised by the club, the membership has grown from 40 to 120, of which 40 are flying members.

The highest total in flying time for the month was raised

the Essex coast, at Easter. A Blackburn "Bluebird" seaplane, is expected to be delivered shortly for the purpose. Pupils will not be taught to fly on seaplanes from the *ab initio* stage. They must first obtain the "A" licence by instruction on land planes at Hadleigh or Conington. There is every indication of considerable support being received for these branch clubs and, in fact, they may quite possibly outgrow their parent concern.

A curious factor in the success of the Suffolk Club is that it cannot be considered as based on the support of the County. The membership is not composed of the County people. This, incidentally, shows the enthusiasm of those who do make up the membership, for to practise flying at Hadleigh they are obliged to make comparatively long journeys between the aerodrome and their homes. This County apathy lends weight to the suggestion that Conington and Brightlingsea may expand beyond the scale of the Hadleigh Club.

Another feature in the circumstances of the club is that all its leaders are active pilots. Lady Bailey is the President, Dr. James C. Sleigh is Chairman, Mr. H. L. Billinton, Mr. Courtney N. Prentice and also Dr. Sleigh are Directors. The Secretary, Major P. L. Holmes and Mr. Courtney N. Prentice were war pilots.

Domestic Flying

MR. AND MRS. THOMAS NAYLOR, of Eastham, Cheshire, who are believed to be the first married couple to qualify as pilots, flew their own Gipsy-Moth from London to Hooton, Cheshire, last week-end. They are the first members of the Liverpool Aero Club to own a machine.

Karachi Flying Club Opened

ON February 10 the new Karachi Flying Club was opened by Mr. Percival, Judicial Commissioner of Sind, who said that four clubs had been started in India under the control of the Aero Club of India. They were at Calcutta, Bombay, Delhi and Karachi. Each club had been given two D.H. "Moths" and a financial grant. Owing to the climate at Karachi flying was possible all the year round.

Twenty-two applications had been received for training. Six were from Indians and 16 from Europeans, two of whom were women. The club had 44 Indian and 52 European members. After the club was declared open there were aerial displays on the Club's two D.H. "Moths," and by the R.A.F.

Tollerton Hall

A COUNTRY club is to be opened this month at Tollerton Hall, near Nottingham. Close by is an aerodrome site which the Nottingham Corporation are considering for civil aviation purposes. It is now used by the Nottingham Aero Club, and is only 8 minutes' motor run from the Nottingham L.M.S. station. It is anticipated that many hunting men will form the habit of flying from London to Tollerton for a day's hunting. There is some suggestion of a future air service between London and Tollerton.

**THE
ARMSTRONG
SIDDELEY
DEVELOPMENT CO., LTD.**

through its allied organisations, Messrs. Armstrong Siddeley Motors Limited, Sir W. G. Armstrong Whitworth Aircraft Limited, and Messrs. A. V. Roe & Co., Ltd., is in an unrivalled position to supply Governments, Airline Operating Companies, Flying Schools and Clubs with a wide range of aircraft and engines. Enquiries are invited and prices can be quoted on application.

ARMSTRONG SIDDELEY MOTORS LTD.

HEAD OFFICE AND WORKS
LONDON

COVENTRY
10 OLD BOND STREET, W.I

**SIR W. G. ARMSTRONG WHITWORTH
AIRCRAFT LIMITED**

WORKS AND AERODROME
LONDON

WHITLEY, COVENTRY
10 OLD BOND STREET, W.I

A. V. ROE & COMPANY LIMITED

NEWTON HEATH

MANCHESTER

AIRCRAFT

The following aircraft are available

AIRCRAFT FOR THE SERVICES

The Armstrong Whitworth All-Steel Atlas 2-seater Fighter or reconnaissance machine, fitted with an Armstrong Siddeley Jaguar engine and wheels or floats.

The Armstrong Whitworth All-Steel Siskin 3.A. single seater Fighter fitted with an Armstrong Siddeley Jaguar engine.

The All-Steel A.W.A. 14 high performance Fighter fitted with an Armstrong Siddeley Jaguar engine.

AIRCRAFT FOR CIVIL PURPOSES

The Armstrong Whitworth Argosy. A 20-seater Airliner fitted with three Armstrong Siddeley Jaguar engines.

The Avro Commercial Monoplane. A 4-5 seater or 8-10 seater fitted with three Armstrong Siddeley engines.

The Avro-Avian. A 2-seater light aeroplane fitted with Cirrus or Armstrong Siddeley Genet engine.

AIRCRAFT FOR SCHOOL & CLUB PURPOSES

The Avro Gosport, fitted with Armstrong Siddeley Mongoose engine and either wheels or floats.

The Avro 504.N. fitted with Armstrong Siddeley Lynx engine and either wheels or floats.

The Avro-Avian, fitted with Cirrus or Armstrong Siddeley Genet engine.

**SIR W. G. ARMSTRONG WHITWORTH
AIRCRAFT LTD. COVENTRY**

**A. V. ROE & COMPANY LIMITED
MANCHESTER**

AERO ENGINES

The following air cooled engines are available

THE LEOPARD

The Armstrong Siddeley 700-750 h.p. 14-cylinder Leopard for carrying troops or torpedoes.

THE JAGUAR

The Armstrong Siddeley 450-500 h.p. 14-cylinder Geared Jaguar for Civil or Service requirements. Jaguar engines have been in service on the London Paris Airway for over three years.

The Supercharged 14-cylinder *Jaguar* is specially designed for maintaining power at high altitude.

Note.—The Armstrong Siddeley Geared Centrifugal Supercharger was the first device of its kind supplied to the Services and has now been in use for three years.

THE LYNX

The Armstrong Siddeley 215-225 h.p. 7-cylinder Lynx as used on the Amsterdam-Batavia, Munich-Milan and other airways.

THE MONGOOSE

The Armstrong Siddeley 130-140 h.p. 5-cylinder Mongoose engine for training work on land or sea.

THE GENET

The Armstrong Siddeley 80-88 h.p. 5-cylinder Genet, an engine which is very much lighter than any engine in its class and is, therefore, particularly suitable for powering light aircraft.

**ARMSTRONG SIDDELEY MOTORS
LIMITED** **COVENTRY**

ARMSTRONG SIDDELEY MOTORS

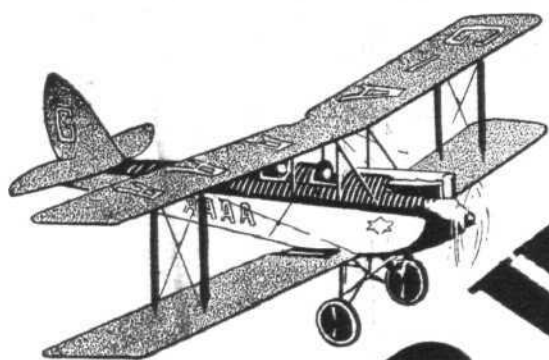
LTD. are specialists in the highest class of light engineering work. In a model factory employing over 4,000 workpeople, they produce annually many thousands of motor-cars, hundreds of air-cooled aero engines and much special apparatus for H.M. Government. The quality, variety and quantity of work undertaken is a unique feature of this factory.

SIR W. G. ARMSTRONG WHITWORTH AIRCRAFT LTD.

constructors and pioneers of all-steel aircraft, employ over 1,000 workpeople at Whitley, near Coventry. Here were designed and built the Imperial Airways' Argosies, the steel Siskins, Atlas and A.W.A. 14's for the Royal Air Force, and here, too, is a school for training pilots under the R.A.F. Reserve Scheme.

A. V. ROE & CO. LTD., the largest, most successful and most experienced designers and manufacturers of training machines in the world. These machines are produced in a large factory, specially constructed for the manufacture of aircraft, at Newton Heath, Manchester. At their works and aerodrome at Hamble, near Southampton, important experimental work for H.M. Government and other customers is undertaken.





IN WORLD WIDE USE

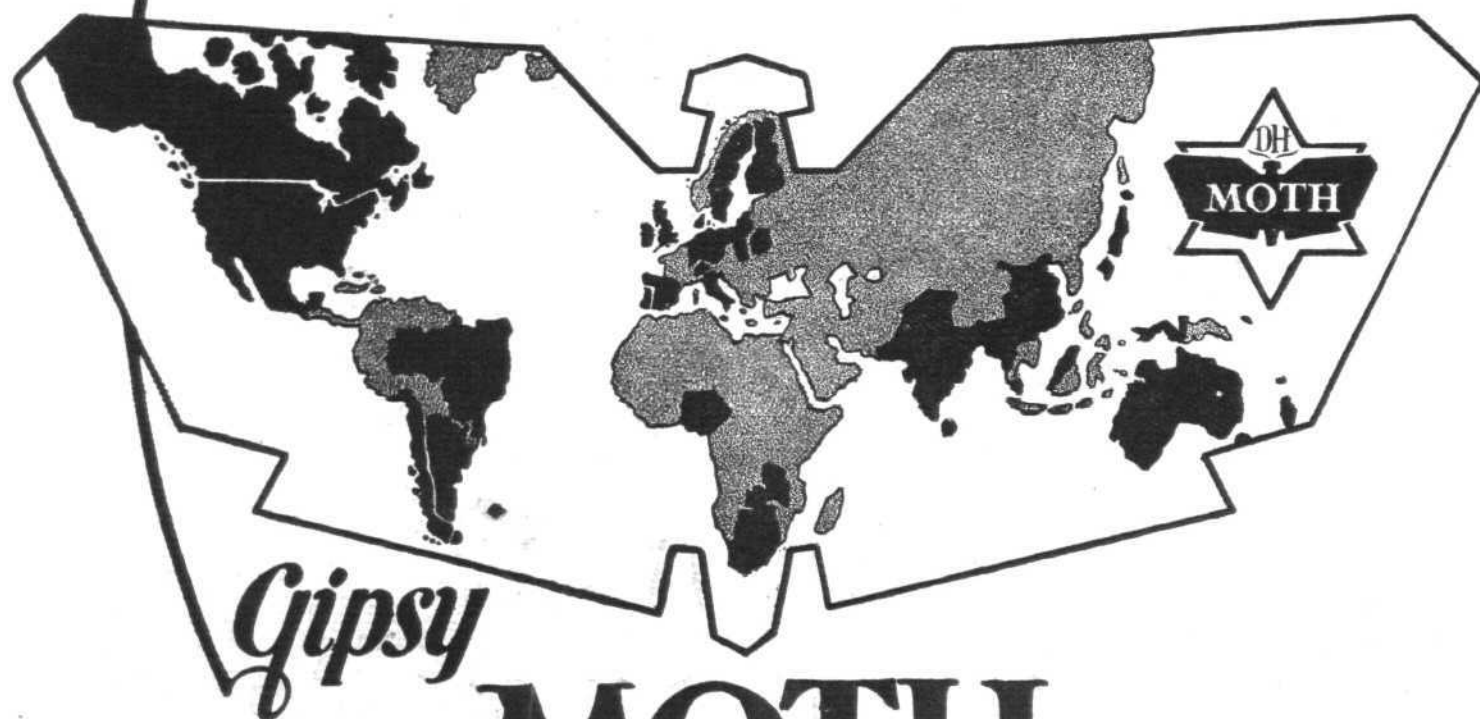
"... they are in use under conditions ranging from the Arctic winters of Northern Canada to the 6,000 ft. high aerodromes of Central Africa, and in all countries they are giving the utmost satisfaction."

On the World map shown below Moths are in everyday service in the countries indicated by black.

The
DE HAVILLAND
AIRCRAFT CO. LTD.
Stag Lane Aerodrome,
Edgware, Middlesex.
Telegrams: Havilland,
Phone, London.
Telephone: Colindale
6160-6163.

The
DE HAVILLAND
AIRCRAFT OF
CANADA LTD.
Bay-Richmond
Building, 372 Bay
Street, Toronto 2,
Canada.
Telegrams: Moth,
Toronto.

The
DE HAVILLAND
AIRCRAFT PTY.
LTD.
Whiteman Street, South
Melbourne, Australia.
Telegrams: Moth,
Melbourne.



Gipsy

MOTH

PRICE £650

METAL
Constructed Supermarine "Southamptons."
(NAVIER "LION" ENGINES)

Four Machines of this type accomplished the R.A.F. Far East Flight of **27,000 MILES** from England round India to Singapore, round Australia to Hong Kong and back to Singapore.
 "The aircraft and engines have been most satisfactory, giving no trouble of any consequence, no forced landings, and only very minor replacements being necessary; the water-tightness of the metal hulls and floats has been excellent."
 "Three of the aircraft will be used for the next cruise, the fourth will remain at Singapore in accordance with Air Ministry instructions."

Extract from Official Log, 15-1-29.

SOUTHAMPTONS designed and constructed by

THE
SUPERMARINE AVIATION WORKS, Ltd.

Proprietors:—Vickers (Aviation) Ltd.,
SOUTHAMPTON; ENG.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club, Filton, Gloucester. Secretary, Major G. S. Cooper, Filton Aerodrome, Patchway.
Cinque Ports Flying Club, Lympne, Hythe. Hon. Secretary, R. Dallas Brett, 114, High Street, Hythe, Kent.
Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Secretary, Mr. Atherton, Avro Aerodrome, Woodford.
Liverpool and District Aero Club, Hooton, Cheshire. Hon. Secretary, Capt. Ellis, Hooton Aerodrome.
Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Major Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, J. T. Dodds, Cramlington Aerodrome, Northumberland.
Norfolk and Norwich Aero Club, Mousehold, Norwich. Secretary, G. McEwen, The Aerodrome, Mousehold, Norwich.
Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria St., Nottingham.
The Scottish Flying Club, 101, St. Vincent Street, Glasgow. Secretary, George Baldwin, Moorpark Aerodrome, Renfrew.
Southern Aero Club, Shoreham, Sussex. Secretary, Miss N. B. Birkett, Shoreham Aerodrome, Sussex.
Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

REPORT for week ending February 10.—Pilot Instructors: Captain V. H. Baker, M.C., A.F.C., Captain F. R. Matthews. Ground Engineers: C. Humphreys and A. E. Mitchell. The following machines were in commission during the week: G-AABL; G-EBXS; G-EBZC; G-EBMP.

Total flying time: 14 hrs. 45 mins. Dual instruction: 11 members received dual instruction during the week, the time being 6 hrs. 55 mins. Solo flying: 10 members flew solo during the week, the time being 7 hrs. 50 mins.

Dinner, dance and cabaret: Members are reminded that the dinner, dance and cabaret will be held on Tuesday, February 26, at the New Princes Galleries, Piccadilly, and are requested to make early applications for tickets so as to facilitate the arrangements.

Club House fund: The Club House fund now amounts to £68 9s. During the week the following donations were received: Anonymous, £10 10s.; R. C. Presland, £1 1s.

Christmas Raffle: Members will be interested to know that G-EBMF, which was raffled and won by Mr. A. F. H. Gee, of Baghdad, has been dismantled and packed for shipment to him.

BRISTOL & WESSEX AEROPLANE CLUB, LTD.

REPORT for the week ending, February 9.—Pilot instructor, E. B. W. Bartlett. Ground engineer for the week: A. W. Webb. Machines in commission (2) YH, TV. Flying time for the week: 13 hrs. 45 mins. Pupils under instruction (6): 6 hrs. 20 mins. "A" pilots (6): 5 hrs. 50 mins. Test flights (12): 1 hr. 35 mins.

Conditions have been most depressing since our last report, and there has been very little encouragement for flying. Mr. Downes-Shaw made a trip to Yeovil which is the only flight to note beyond the aerodrome limits.

CINQUE PORTS FLYING CLUB

REPORT for week ending February 9.—Pilot Instructor: Major H. G. Travers, D.S.C. Ground Engineer: Mr. R. H. Wynne. Machines: de H. Moths RI and NN. Total flying time for week: 11 hrs. 50 mins. Dual instruction: Mr. Evernden, 30 mins.; Mr. Calvert 5 hrs. 5 mins.; Mrs. Travers, 15 mins. Total: 3 members, 5 hrs. 50 mins. "A" Pilots: Mr. Worsell, 45 mins.; Mr. Somerset, 2 hrs. 25 mins.; Mr. Douglas, 1 hr.: Total: 3 members, 4 hrs. 10 mins. Tests and Joyrides: 1 hr. 50 mins.

Better weather this week, although it was too thick for flying on Wednesday, 6th.

Mr. Calvert continues to make good progress and is practically ready to go solo now.

There is much activity in regard to the Easter Meeting on Good Friday and Easter Saturday. Preliminary inquiries promise hearty support both from the trade and private owners and Regulations for the various races are in the printer's hands and will be broadcast during the week.

HAMPSHIRE AEROPLANE CLUB

REPORT for week ending February 9.—Pilot Instructors: F/Lt. F. A. Swaffer and Mr. W. H. Dudley. Ground Engineers: Mr. E. Lenny, and Mr. J. Elliott. Aircraft: D.H. 60 Moth G-EBOH. Flying time for the week: 12 hrs. 50 mins. Pupils under instruction: (8), 7 hrs. 45 mins. Soloists: (2), 2 hrs. 55 mins.; "A" Pilots solo: (3), 55 mins. Passengers with "A" Pilots (3), 35 mins. Instructors solo and tests: (6), 40 mins.

The third Annual Dinner was held at the South Western Hotel, Southampton, on Friday, and an exceedingly pleasant evening was enjoyed by a large number of members and guests.

We were very pleased to welcome Sir Sefton Branker, Lady Bailey, Sqdn.-Ldr. Hinkler, Mayor of Southampton, Col. and Mrs. Barbor, Group Capt. Nanson, Lt.-Cdr. H. E. Perrin, Major Oliver Stewart and several officers of the Royal Air Force.

The Chairman, the Rev. E. Bruce Cornford, announced that Lady Bailey and the Mayor of Southampton had consented to become Vice-Presidents of the club. At the conclusion of the speeches dancing was carried on until 1 a.m.

LANCASHIRE AERO CLUB

Report for week ending February 9.—Flying time, 19 hrs. 20 mins. Instruction, 4 hrs. 50 mins. Solo flights, 10 hrs. 10 mins. Passenger flights 2 hrs. 50 mins. Tests, 1 hr. 30 mins. Instruction: With Mr. Hall: Messrs. Whitehouse, Davies (R. G.), Foote, Mills, Johnson and Stern. With Mr. Cantrill: Messrs. Davies (R. G.), Hardy, Gort, Stern, Sellars.

Soloists (under instruction): Messrs. Davies (R. G.) and Whitehouse.

Pilots: Messrs. Cohen, Lacayo, Hall (R. F.), Meads, Mills, Gort, Nelson, Weale, Harrison, Twemlow, Goodfellow, Ruddy, Michelson, Crosthwaite, Hardy.

Passengers: With Mr. Hall—Mr. Davies. With Mr. Cantrill—Mrs. Greenup, Mr. Blatherwick. With Mr. Twemlow—Miss Foden. With Mr. Meads—Miss Sutcliffe. With Mr. Mills—Mr. Howarth.

Although only two machines were in commission during the greater part of the week, improved weather conditions brought about an increased activity on the aerodrome. On Saturday afternoon G/AAEC, the new Avian, was taken over. The colour scheme is dark blue and silver, with the red rose of Lancashire on either side of the fuselage and red inter-plane struts. It looks very effective.

Messrs. Davies (R. G.) and Whitehouse, both made successful first solo flights during the week. These are the first two *ab initio* pupils sent off by Mr. Hall, since he joined the Club, and they fully justified the care which he has expended on them.

Mr. A. C. Mills has passed out as fit to carry passengers, and took up his first passenger on Saturday.

LIVERPOOL & DISTRICT AERO CLUB

REPORT for week ending Saturday, February 9.—Machines in commission: Avro Avians XX, WK, and ZM, Instructors: Flight-Lieuts. J. B. Allen and A. Sullock (Hony). Ground engineer: Mr. Howard Pixton. Total flying for week: 19 hrs. 10 mins.; dual (15), 8 hrs. 20 mins.; solo (6), 2 hrs. 15 mins.; "A" pilots: solo, (11), 6 hrs. 45 mins. Passenger flights (4), 1 hr. 15 mins. Test Flights: (6), 35 mins.

Mr. Barker performed a very creditable first solo last week. On Sunday last Messrs. Hall and Davis, of the Lancashire Club, visited us, flying Avian XD.

Mr. Rimmer, of the North British Aviation Company, called and hangared his Avro 504 on Saturday, followed by a further machine on Sunday.

Mr. Moulds took delivery of our new MK IV Avian ZM on Friday, flying back from Woodford without incident, and the machine was much admired and flown over the week-end. Its arrival allows Mr. Pixton to get busy with WK, which is now due for overhaul.

Mr. and Mrs. Naylor bought a "Moth" in London and flew the machine back to Hooton on Sunday. They thus become the first private owners of the Liverpool Club, and both are *ab initio* pilots. This flight is remarkable in that it was their first effort at cross-country flying.

On Saturday next a landing competition will be held for the John Leeming challenge cup, when we hope to have Sir Sefton Branker present as one of the judges. All members are specially requested to attend. The afternoon should prove most instructive, and no doubt the winner of the cup will show his appreciation in the usual manner, after sunset.

MIDLAND AERO CLUB

REPORT for week ending February 9.—The total flying time: 23 hrs. 8 mins. Dual, 10 hrs. 10 mins.; solo, 8 hrs. 15 mins.; passenger, 4 hrs. 20 mins. Test, 23 mins.

The following members were given dual instruction by Flight-Lieut. T. Rose, D.F.C., and Mr. W. H. Sutcliffe:—J. H. Stevens, C. T. Davis, T. W. Wild, L. V. Mann, A. E. Coltman, G. P. Haylock, Major D. Thompson.

Advanced dual: S. H. Smith, E. P. Lane, S. G. Hall, W. L. Handley, J. Rowley, H. J. Lattey, G. C. Jones, S. Duckitt, C. W. R. Gleeson, J. Cobb, M. Blakeway.

"A" pilots:—R. L. Brinton, G. C. Jones, R. L. Jackson, E. P. Lane, S. G. Hall, G. V. Perry, J. Rowley, M. A. Murtagh, H. J. Lattey, H. J. Willis, S. H. Smith, R. D. Bednell, R. C. Baxter, S. Duckitt, G. Savage, C. W. R. Gleeson.

Soloists: W. L. Handley, L. V. Mann, A. E. Coltman.

Passengers: E. Hanson, L. V. Mann, F. G. Hicks, D. W. Bruton, M. Turner, J. G. Wood, R. N. Clarke, D. Mendez, Dr. Johnson, G. P. Haylock, E. A. Dexter, R. Aspinall, J. E. Hicks, Miss M. Brinton.

Mr. G. Robson took delivery of a Gipsy Moth, which is now housed in the Club Hangar.

The Midland Air Ball, under the auspices of the Midland Aero Club, will be held at the Grand Hotel, Birmingham, on February 25. Tickets, price £1 1s., may be obtained from Capt. J. C. Chaytor, Pooley Hall, Polesworth, Tamworth.

NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending February 10.—Instructor: G. M. S. Kemp. Ground engineer: K. C. Brown; Asst.: J. Tait. Aircraft: 3, PT, QV, LX. Total flying time: 14 hrs. 5 mins. Instruction (9), 7 hrs.; "A" pilots (11), 5 hrs. 5 mins.; passengers (3), 1 hr. 50 mins.; test (1), 10 mins.

Our flying time is slowly recovering though we are still awaiting some finer weather, and at present a few more flying members would be welcome.

We were able to proceed with the landing competition yesterday, when Mr. Irving and Mr. C. Thompson tied with an equal number of points.

Three new members have joined this week, and we were pleased to welcome Capt. Kingwall, who called with a "Moth" on his way to Renfrew.

NORFOLK & NORWICH AERO CLUB

REPORT for week ending February 10.—Pilot instructor: J. C. Houston, M.C. Ground engineer: A. Kirkby. Machines (3): ZW, QX, XE.

Total flying time, 10 hrs. 50 mins.; dual, 4 hrs. 15 mins.; solo training, 40 mins.; "A" pilots, 5 hrs. 5 mins.; passengers, 30 mins.; tests, 20 mins.

The weather has been disappointing again this week, and very cold, so that members fight shy of flying except on the very best of days. On Saturday, however, quite a nice gathering were present to watch and take part in the landing and bombing competitions. The Landing Competition was won this week by Mr. J. Collier, and the bombing by Mr. A. Adcock. We congratulate both "on 'em."

All the tickets for the annual dinner, which takes place on the 22nd inst., have been sold, although we are considering as to whether it is advisable to have an overflow room. We shall make up our minds by next week's report, however.

Mr. Collier has presented the Club with a table tennis outfit, for which we are very grateful, and it is proving quite an attraction. Many members are rapidly losing weight.

SCOTTISH FLYING CLUB, LTD.

REPORT for week ending February 9.—Chief Instructor: Mr. R. M. Stirling. A.F.C. Ground engineer: Mr. W. Calder. Machines in commission: "X-Moths," G-EBVT, G-EBYG, G-EBUX. Dual instruction: 1 hr. 55 mins. Solo flying: 2 hrs. 40 mins. Passenger flights: 8 hrs. 50 mins. Tests: 1 hr. 20 mins. Total for week: 14 hrs. 45 mins. Instruction (with Mr. Stirling): Messrs. J. E. R. Young, H. D. Primrose and J. C. McDougall.

With four days on which flying was possible, the week represents quite the best weather we have experienced in 1929. On Thursday the inaugural

visit to Edinburgh, in connection with the scheme for affording instructional flying to members in the east, was successfully carried out. Leaving Renfrew at 10 a.m., UX, VT and YG, piloted by Mr. Stirling, Mr. B. R. Millar and Mr. G. C. Walker, crossed in formation to Turnhouse Aerodrome, where the day was spent in giving demonstration flights, etc. Some solo flying was done by Edinburgh members, and Mr. J. C. McDougall commenced instruction. In future, Mr. Stirling will visit Turnhouse every Thursday, and will be available for instructional work from about 10.30 a.m. until shortly before dusk.

On Wednesday afternoon we had a very welcome visit from a much-missed friend and counsellor, Capt. A. N. Kingwill, who ferried our latest acquisition, G-EBUX, from Stag Lane. Unfortunately, to the general regret, he had to return south the same evening and deprived us of the anticipated pleasure of his company at the Club Dance on Friday. On the same day we were also pleased to receive a visit from Maj. G. S. Cooper, of the Bristol and Wessex Club.

The Club Dance, in the "Waldorf," Glasgow, on Friday evening was thoroughly enjoyable, and, despite many counter attractions in town, proved distinctly successful.

SOUTHERN AERO CLUB

REPORT for week ending February 10.—A fair amount of flying was possible during the week, and on Sunday afternoon the weather allowed several pupils to have instruction.

Visitors to the aerodrome have included a Moth from de Havillands, and, on Sunday, Mr. Simmonds and Lieut.-Col. Strange on the Spartan, YU. Both Mr. Miles and Mr. Pashley flew the machine, and expressed satisfaction at its performance.

On Friday, Mr. Miles and Miss Birkett flew over to Southampton on the Avian, G-AADE, to see Mr. Bellairs off on the *Arundel Castle* to South Africa.

SUFFOLK & EASTERN COUNTIES AEROPLANE CLUB

REPORT for week ending February 9.—Instructor: G. E. Lowdell, A.F.M. Ground engineers: "A," W. L. Garner; "C," E. Mayhew. Aerodromes: Hadleigh, Suffolk and Conington, Cambs. Seaplane Base: Brightlingsea, Essex. Flying time: 22 hrs. 20 mins. by Suffolk and Cambridge clubs as follows:—

Suffolk Aero Club.—Flying time: 19 hrs. 40 mins. 12 members were given dual (6 hrs. 30 mins.). 3 members flew solo under instruction (3 hrs. 55 mins.). Flights were made by 6 "A" and "B" pilots (6 hrs. 55 mins.). 9 passengers were carried (1 hr. 10 mins.). 10 tests were made (1 hr. 10 mins.).

Messrs. Payn and Garner carried out first solos successfully during the week. Dr. Sleight and Mr. Prentice made cross-country flights to Kelvedon and Mr. Collins flew to Colchester.

The great event of the week was the reception to our President, the Hon. Lady Bailey, on her return to the Club from her great flight round Africa. This is already fully reported elsewhere, therefore suffice it to say that over 150 members and friends, among them the chairman, secretary, instructor and members of the Norfolk and Norwich Aero Club, assembled at The Great White Horse Hotel, Ipswich, to do honour to the occasion. After dinner Lady Bailey gave us a most interesting and graphic description of her flight. Dancing then became the order of the evening and the general opinion was that the event was in every way successful and enjoyable.

The Cambridge Aero Club.—Flying time: 2 hrs. 40 mins. 4 members were given dual instruction (2 hrs. 35 mins.). 1 passenger was carried (5 mins.). Flying time at Cambridge was low as most of the members came to Hadleigh on Thursday instead of the machine going to them. The Club continues to make steady progress.

YORKSHIRE AEROPLANE CLUB

REPORT for week ending February 9.—Pilot instructor: H. V. Worrall. Ground engineer: R. Morris. Machines in commission: 3 (TB, SV and RF). Flying time for week: 20 hrs. 5 mins. Instruction: 9 (8 hrs. 10 mins.); soloists: 2 (4 hrs.); "A" pilots: 10 (6 hrs. 45 mins.); passengers: 3 (25 mins.); test flights: 8 (45 mins.).

Miss Ellison and Mr. A. Senior carried out their low tests successfully on February 9.

There has been a good deal of activity amongst the members this week, and we managed to get in 9½ hrs. last Sunday, which is very satisfactory for the time of the year.

There is to be a Whist Drive at the Club House on Wednesday, February 20, at 7.45 p.m., when it is hoped as many members as possible will attend.

FROM THE FLYING SCHOOLS

Brooklands School of Flying, Brooklands Aerodrome

REPORT for week ending February 10.—Managing director: Capt. H. D. Davis, A.F.C. Instructors: Capt. H. D. Davis, A.F.C.; Capt. E. A. Jones; and Maj. C. M. Pickthorn, M.C. Machines in commission: Renault "Avros," G-EBVE, G-EBWJ, and "Moth" G-EBMV. Total flying time: 10 hrs. 40 mins.

On Saturday, February 9, we were honoured by a visit from Sir Sefton Brancker, who made an inspection of the machines and joined the instructors and pupils at lunch.

The school has acquired its first "Moth," which is in great demand by instructors and pupils alike and is hardly allowed to remain on the ground at all.

We are glad to welcome Miss Emma Haig as one of the latest recruits to the Brooklands School of Flying. Miss Haig will be starting her instruction in about a week's time. Mr. W. H. Chen and Mr. F. H. Green have also joined the School.

Aerial activity is now steadily increasing, as some of our winter sports enthusiasts have returned and started to fly again.

Surrey Flying Services, Croydon Aerodrome

REPORT for week ending February 9.—Principals: Mr. F. W. J. Grant and Capt. A. F. Muir. Four instructors. Nine fully-licensed ground engineers. Secretary: Mr. R. D. Price.

The following pupils have had instruction this week with Mr. Flynn: Messrs. Fox, Brown, Rogers, Benson, Godfrey, Lane, Brodie, Briggs and Brooks, and Messrs. Brodie, Briggs, Brunning and Masters have all been solo satisfactorily.

Notes.—Although we have only been concentrating on school work for the past few months, the following pupils have all obtained their "A" licences. Messrs. Lister, Pirie, Kennedy, Masters, Doyle, Taylor and Moursi, and Messrs. Brodie, Briggs and Brunning are only awaiting favourable weather conditions to complete their tests.

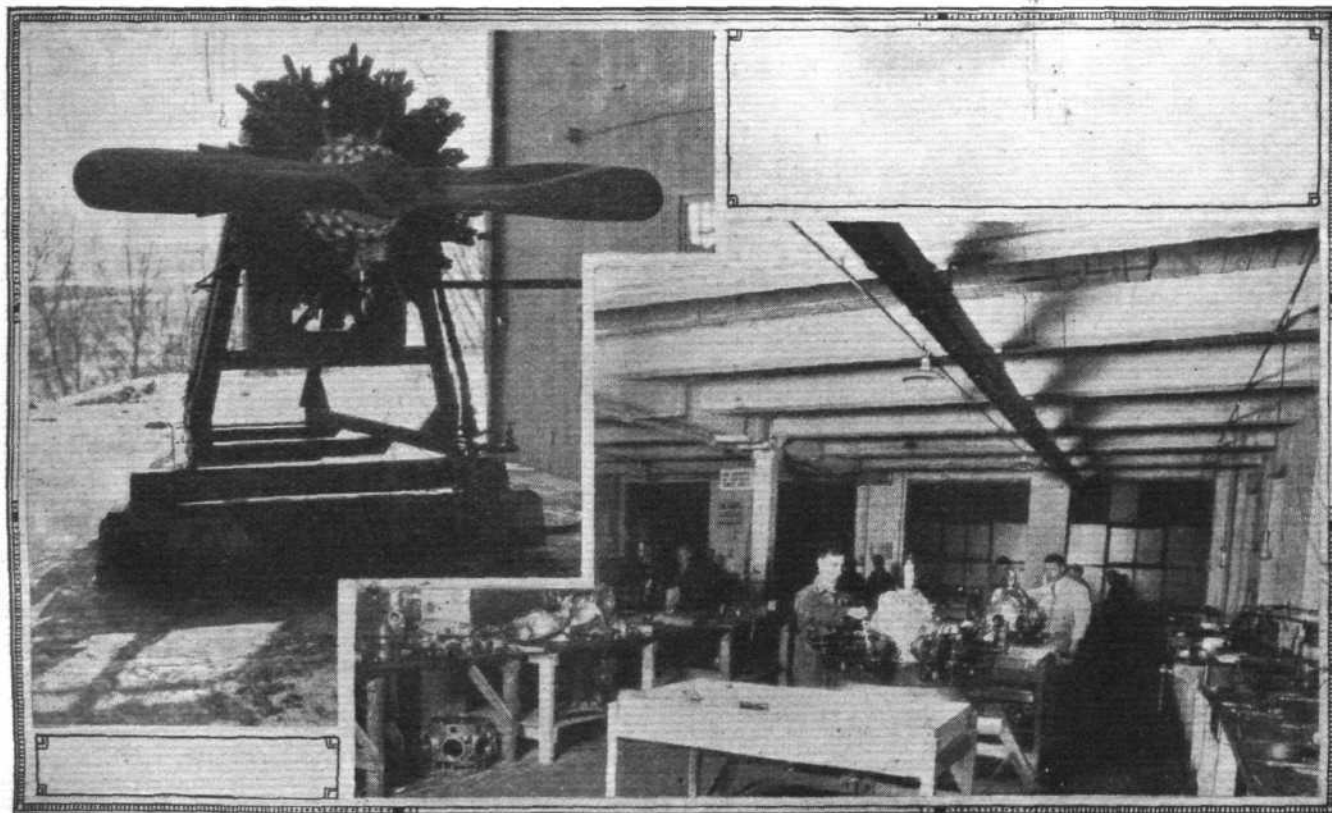
Owing to the prevalence of fog during the week, activities were more or less confined to ground work, when many of our pupils availed themselves of the opportunity of a general look around in our Workshops and Photographic Dept., where some very interesting data can be obtained in construction of aircraft, engines, etc.

Mr. Moursi, having taken his "A" licence, is now undergoing a further course of instruction for his "B" licence. Mr. Lister who has for some time past owned his own "Avian," constantly uses his machine for visits to all parts of the country, and finds it exceedingly useful.

Mr. Kennedy and Mr. Taylor have taken up foreign appointments since qualifying here. We regret that Miss Darlington and Mr. Maitland Warne were unable to obtain their licences before returning to the U.S.A. and Uganda (owing to weather conditions). Mr. Doyle has now joined the Auxiliary Air Force, and is attached to 601 Squadron at Hendon.

Over 300,000 passengers have been carried in the past seven years on our "Clerget Avros," which are used regularly for joy flying at this aerodrome.

In our workshops at present there are two new "Avros" ready for assembly to put same in commission when required, and two D.H. 9s. under construction. We have an "Avro" being overhauled and converted for another joyriding company. The photographic section is being kept very busy these days.



ARMSTRONG-SIDDELEY ENGINES IN CANADA: Two views of the Armstrong-Siddeley Building Plant in Ottawa, showing the Engine Department, erection and cleaning (right), and the engine test bed (left).



Appropriate Gifts



ROYAL AIR FORCE

Badge Brooch in Diamonds (Brilliants), mounted in all Platinum, size from wing to wing 3 inches.

£125 0 0

Badge Brooch in Diamonds (Brilliants), Rose Diamonds, Platinum and 18-carat Gold, as illustrated.

£48 10 0

Rose Diamond, Platinum, 18-carat Gold and Enamel.

£27 10 0

If with Rose Diamonds on Monogram only and 18-carat Gold Wings.

£11 0 0

In 15-carat Gold and Enamel.

£4 7 6

18-carat Gold Links with Raised Regimental Badge in Platinum and Gold.

£12 12 0

18-carat Gold Links with Regimental Colours in Enamel.

£4 5 0



Cigarette and Match Cases in Gold and Silver.

Cigarette Cases.

Size $3\frac{1}{4} \times 2\frac{1}{2}$ inches

9-carat Gold.

£10 10 0

Sterling Silver.

£2 0 0

" $3\frac{1}{4} \times 3\frac{1}{4}$ "

£12 0 0

£2 5 0

" $4\frac{1}{4} \times 3\frac{1}{4}$ "

£17 10 0

£2 15 0

Tear-off Match Cases

£5 0 0

16 6

HERE is a handsome Cigarette Case, beautifully engine-turned—a new and exclusive shape—slim yet very practical. The value is nowhere to be surpassed.

There are also other cases in Gold, from £10 to £100. The Goldsmiths & Silversmiths Company will be pleased to forward illustrated catalogues immediately upon request.

The GOLDSMITHS & SILVERSMITHS COMPANY LTD

Jewellers and Silversmiths to H.M. The King.

112, Regent Street, London, W.1.

(Corner of Glasshouse Street.)

NO BRANCH ESTABLISHMENTS ANYWHERE.

Save time by using the Air Mail.

Blackburn

RIPON



THE "RIPON II" NAPIER-ENGINE TORPEDOPLANE

with gunner's cockpit immediately behind the pilot. Equally suitable for coastal-defence, reconnaissance, bombing, and torpedo-carrying purposes. Built to operate as a seaplane or a landplane. Adopted by the FLEET AIR ARM of GREAT BRITAIN and by Foreign Governments.



THE BLACKBURN AEROPLANE AND MOTOR COMPANY LIMITED

Head Offices and Works: OLYMPIA, LEEDS, YORKSHIRE.

London Office: AMBERLEY HOUSE, NORFOLK STREET, STRAND, W.C.2

P.1.



AIRISMS FROM THE FOUR WINDS.

Remarkable Balloon Adventure

LAST Sunday morning a balloon ascended from Bitterfeld, near Leipzig, for an inland cruise with Dr. Paul Rohr, Herr Paul Thieleck (a dentist), and Herr G. Rexhausen (a farmer) on board. A sudden storm swung them in a northerly direction, however, and as a descent would have been too dangerous they had no alternative but to drift with the storm. About mid-day a strange land was passed which they imagined to be the Netherlands and an hour or so later the sea was reached. An attempt to descend was made but the apparatus for releasing the gas failed, so the balloon continued to drift. The English coast was reached and they were blown along it for some distance and were then carried out to sea again. For some hours the balloon sailed northwards and when darkness descended the position seemed critical. At 3 a.m. the reflection of the lights of a city were sighted which proved to be Aberdeen. Hills then loomed menacingly as the balloon passed over Scotland, and collisions actually occurred. Ballast and instruments were thrown overboard to lighten the car but it did not improve the situation much. Finally, the car caught in a tree and the three balloonists were pitched out. One of them received an injury to his ankle. They set off in the darkness but did not meet assistance until late in the morning, when a man kindly took them to his home. They had been without food for eighteen hours. At Aberdeen the German Consul arranged for their return to Germany.

Balloon Adventure at Reading

THE Hon. A. F. de Moleyns and Mr. Percival Spencer ascended in a balloon from Reading recently and the car struck the roof of a shed, dislodged some tiles, and brought down some telegraph wires. The balloon emerged from its danger eventually and rose clear, passing over the town in a western direction.

Mr. Van Lear Black

ON February 11 the American millionaire, Mr. Van Lear Black, left Croydon Aerodrome in a three-engined Fokker monoplane (Wright "Whirlwinds") for a business air tour of 35,000 miles to Egypt, Cape Town, India and China. Besides his two Dutch pilots he was accompanied by his valet. The machine passed Le Bourget, Paris, at 11.25 a.m.

Forced Landings at Wimbledon

A MONOPLANE engaged on the French air service reached Croydon from Paris on February 10 and left for Cricklewood on February 11, escorted by a D.H. "Moth" belonging to Handley Page, Ltd. The light plane was forced to land in Wimbledon Park, and the monoplane circled for nearly an

hour searching for its escort. Having failed, the pilot made a safe landing on the Common, as he did not know the way to Cricklewood. On board were a mechanic and passenger as well as the pilot.

Endurance Records

ON January 3 last, Miss Bobbie Trout, an 18-year-old girl of Los Angeles, flew continuously for 12 hrs. 5 mins., in a *Golden Eagle* machine fitted with a 60 h.p. engine. On January 30, Miss Elinor Smith beat that time with a continuous flight of 13 hrs. 46 mins. 45 secs. over New York. She is a year younger than Miss Trout. The latter again took up the challenge on February 11 and put up a record of 17 hrs. 5 mins. 37 secs. in the *Golden Eagle* machine.

Explorer's Ship Adrift

COMMANDER R. BYRD'S ship, *City of New York*, was torn from its anchorage by a gale which swept across the Antarctic last week and is drifting helplessly in the Bay of Whales.

Costly Aircraft Carriers

THE American aircraft carriers, *Lexington* and *Saratoga*, are reported to be so costly to run that they may have to be berthed to save expense. They are 33,000-ton ships and were commissioned in 1925. Each can accommodate 72 aeroplanes.

Col. C. Lindbergh Engaged

THE United States Ambassador at Mexico City, Mr. Dwight B. Morrow, announced the engagement of his daughter Anne to Col. Charles Lindbergh, the Atlantic airman, on February 12.

Aircraft Assist Ice-Bound Ships

MORE than seventy steamers are reported to be ice-bound in the Baltic and there is another sixty off the Elbe estuary. Aircraft are taking food supplies to many of the ships.

Graf Zeppelin

THE cruise of the *Graf Zeppelin* to Egypt has been postponed until March 26 owing to the severe weather delaying preparations.

Scandinavian Air Services

IT has been decided to recommend the establishment for one month next summer of a night air-mail service from Malmoe to Copenhagen, Amsterdam, London and Paris, according to a message from Copenhagen. It is proposed to link this service with those from Helsingfors, Oslo and Stockholm. Further, it has been thought advisable to have services throughout the year to start in the afternoon, linking Helsingfors, Oslo, Stockholm, Malmoe, Copenhagen and Western Europe.



A SUCCESSFUL AMERICAN AMPHIBIAN: The Sikorsky S-38, fitted with two 410 h.p. Pratt and Whitney "Wasp" engines. Two of these machines were recently delivered to the U.S. Navy, and others are used by the Western Air Express and Pan American Airways on their commercial air mail and passenger routes.

German Heavy-Oil Aero Engine

A JUNKERS G.24 monoplane fitted with a Junkers 600 h.p. heavy-oil engine made a first test successfully last week. A circular flight over Dessau was completed.

Air Mails for Algeria

THE Postmaster-General announces that air mail correspondence for Algeria is now sent by air from London to Paris as well as from Marseilles onwards, and the air fee is now 4d. per oz. The mail now closes at the General Post Office, London, at 6 a.m. each weekday except Saturday.

R.A.F. Officers Held to Ransom

ON February 11 three R.A.F. machines were flown to Sultanpore, near Jellalabad, to bring back Flight-Lieut. Chapman and Flying-Officer Davis, the pilots of the R.A.F. Vickers "Victoria," which made a forced landing recently

whilst flying from Peshawar to Kabul. One of the machines landed and immediately signalled the others not to land. For two hours the machines circled and then returned to Peshawar. It appears that the Afghans with whom the officers are staying require a ransom for their release. There is no fear of their safety. The officer who landed and is now captive with them is Flying-Officer C. R. Hancock. Instructions were despatched to the British Consul at Jellalabad to arrange for their release.

Air Search for Landing Grounds

A 10,000-MILE air tour in search of municipal landing grounds is to be carried out by Sir Alan and Lady Cobham between April and August. Every town from Inverness to Penzance will be visited. One of the proposals is to take up every Mayor in this country for a flight.

BRIEF LITERARY REVIEWS

"THE Art of Flying."—Capt. Norman Macmillan's interesting book, "The Art of Flying," has appeared in its second edition, published as before by Gerald Duckworth and Co., Ltd., at 5s. net, and it has also been revised and enlarged by the author. Almost a thousand copies were sold in Australia, and an American edition has just been put on the market by Edwin Valentine Mitchell, Inc., Hartford, Conn. Service pilots there have expressed much appreciation of the book's value to the pilot. Capt. Macmillan has added a chapter entitled "The Flying Sense" to the second edition, which treats of the theoretical aspect of practical flying in a way which every pilot should be familiar with but, unfortunately, is not. As with the other chapters, the author makes extra interest by narrating familiar experiences by way of illustrating his theories.

"Smithsonian Institution Report."—In the 1927 report of the Smithsonian Institution there is an excellent illustrated account by Mr. Lincoln Ellsworth, of the Amundsen-Ellsworth flying-boat expedition to the regions of the North Pole in 1925 and the *Norge* airship flight to the Pole in May, 1926. On the first attempt the Dornier-Wal flying-boats came down 120 miles from the North Pole after flying for eight hours from Spitzbergen, when they were expected to be over the Pole. On landing, it was found they had drifted westward and also half of the fuel was consumed. The lead in which they landed closed up before they could take off again, and it required 25 days' hard work to free one machine. The expedition cost 150,000 dolls., and 120,000 square miles of unknown regions were explored, whilst two soundings showed the depth of the Polar Basin at that latitude to be 12,000 ft., which precluded the possibility of land on the European side of the North Pole.

The Italian *Norge* airship was tried for the next expedition of the following year, and it descended to within 300 ft. when over the Pole. Its motors were throttled and heads were bared whilst three flags were dropped. Then the course for Point Barrow, Alaska, was set, a further distance of 1,500 miles, and a landing was finally made at Teller, 91 miles north-west of Nome, after a flight of 3,393 miles in 72 hours.

In the same Smithsonian Report is Wolfgang Klemperer's illustrated lecture on "Soaring Flight."

"The Hawk."—We have received the first issue of the Royal Air Force Staff College annual magazine, "The Hawk," published at Andover, Hants, price 2s. 6d. In style it is very much like the excellent Cranwell Cadet College magazine. The contents will consist for the most part of work produced

in the ordinary run of duty at the Staff College. A most interesting feature comes under "Service Experiences." Whilst at the Staff College each student is required to place on record his service adventures, particularly those concerned with warlike operations. There is a very intimate review of "War Birds," the diary of an unknown American aviator. The identity of the author is revealed, and to those who read the diary, although the name may convey nothing, yet a curiosity is satisfied. There is also a photograph of the diarist and his friends, Springs, Callahan, etc., who became so alive in the book. The contents of the first issue of "The Hawk" are far from localised. Subjects range over experiences in many countries, and it is most unlikely that the Staff College alone will enjoy the contents. It is the ambition of the editors to stimulate a medium of expression for the Royal Air Force; and that hope is shared by Marshal of the Air Force Sir Hugh Trenchard in a letter to the Commandant. The editor is Sqdn.-Ldr. A. S. G. Lee.

"Poetry Review."—The January-February issue of the "Poetry Review" announces the results of a competition for poems on the subject of flight. Lieut. J. L. Hitchings, Air Corps, Fort Crockett, Galveston, Texas, won the first prize of 50 dols. with his ballad "The Ghosts of the Eighth Attack." It is a popular choice, one imagines, suggesting the judges' preference for realism. It is the sort of thing that one has not to read twice to understand, for the simple reason that the poet understands what he is chanting.

"International Aircraft Markings."—We know from the correspondence that comes to our office of the public curiosity in the identity of passing aircraft. Sqdn.-Ldr. Lord Edward Grosvenor and Mr. Leonard Bridgman have produced an illustrated work, published by Macmillan and Co., Ltd., price 2s. 6d., called "International Aircraft Markings," a title which explains the contents. The naval, military, and civil markings used on aircraft by all countries are vividly illustrated in the correct colours and design. This book should become a standard reference.

"Handley Page Bulletin."—The January issue of this journal contains further interesting details of the new all-metal Handley Page "Hinai," which can be fitted with two Bristol "Jupiter VIII" engines with four-bladed airscrews, or, with slight modification, with Rolls-Royce F. 12A engines, or with Napier "Lion" engines. There is also a trenchant article on safer civil flying and incidental items of news. The contents are printed in three languages—English, French and Spanish—and are well illustrated. The price of this journal is 6d.

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns

THE SIMPLEX "RED ARROW"

[2182]. We are in receipt of your issue of January 10, and note the very good write-up of the Chicago International Aeronautical Exposition but must take exception to the statement of Lady Heath that there is no protection for the pilot in case of a nose over with our ship.

This is a very unfair statement as this was taken care of very safely after numerous conferences with the Department of Commerce at Washington and was arranged to their entire satisfaction.

We had a very fine demonstration of how good this

protection is, when one of our demonstrator pilots recently ran into a fog in Indiana and finally bumped into an orchard and landed the ship squarely on its back, without injury to the pilot and without crushing the protective rim

If Lady Heath had mentioned this while in our exhibit we would have shown her how strongly this protective rim is reinforced, but the writer did not notice her until just before she left the exhibit and only spoke a few words with her.

THE SIMPLEX AIRCRAFT CORP.

Defiance, Ohio.

January 29, 1929.

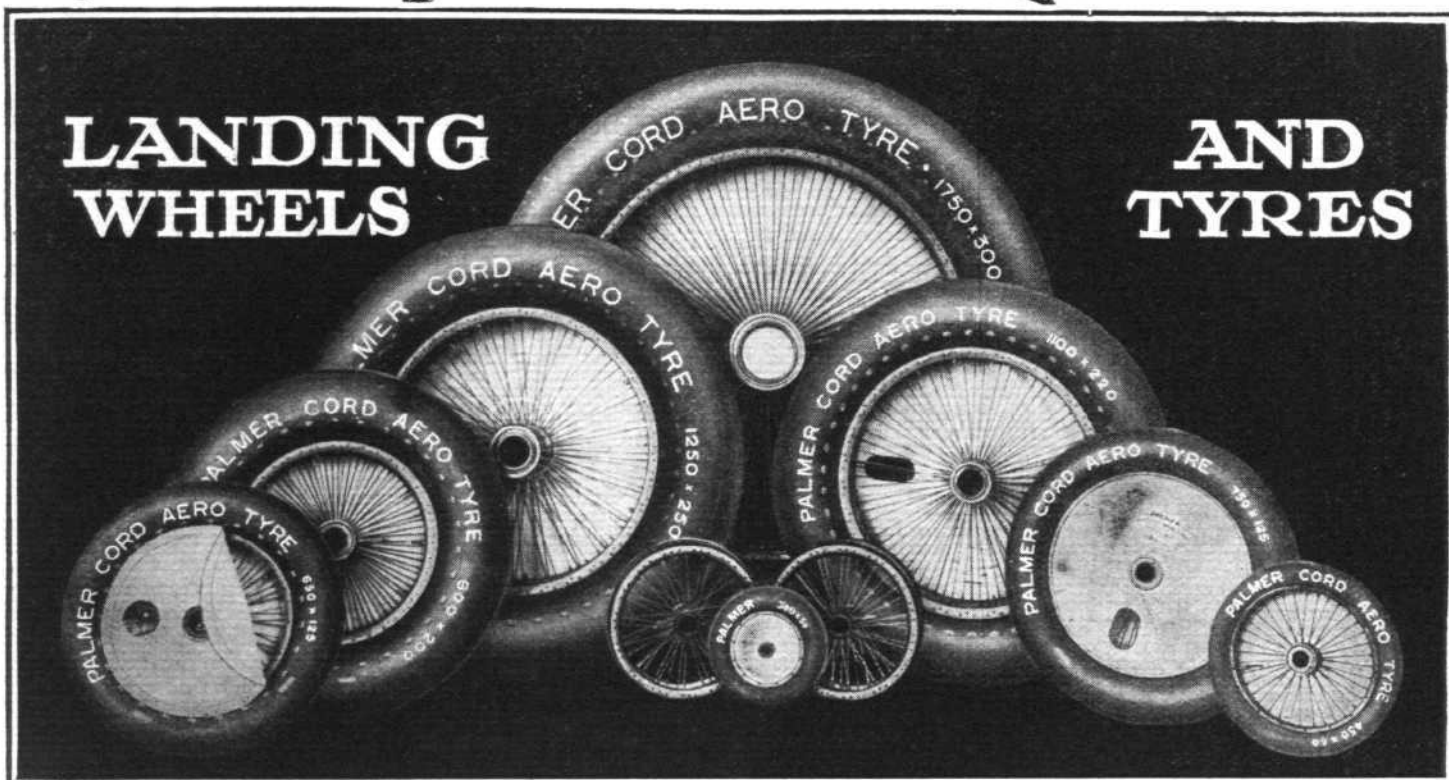


PALMER



LANDING WHEELS

AND TYRES



STANDARD SIZES.

Tyre Size	Wheel No.	Hub		Track Line	Tyre Size	Wheel No.	Hub		Track Line	Tyre Size	Wheel No.	Hub		Track Line
		Length	Bore				Length	Bore				Length	Bore	
375 x 55	168	m/m	m/m	m/m	700 x 100	176	m/m	m/m	m/m	1000 x 180	148	m/m	m/m	m/m
"	195	111' 12"	25' 4"	Central	"	179	178'	44' 45"	Central	"	149	220'	80'	Central
300 x 60	16	111' 12"	25' 4"	Central	650 x 125	119	178'	55'	132/46	"	155	185'	55'	Central
450 x 60	30	89'	31' 75"	Central	"	147	178'	55'	Central	"	166	220'	66' 67"	Central
"	172	130'	38' 09"	Central	"	188	120'	34' 92"	Central	"	157	185'	80'	Central
575 x 60	21	160'	28'	Central	"	336	178'	44' 45"	132/46	"	202	185'	60' 32"	Central
"	180	150'	38' 09"	104/46	750 x 125	77	178'	44' 45"	132/46	"	134	220'	66' 67"	Central
"	186	120'	34' 92"	Central	"	92	185'	55'	135/50	"	136	250'	80'	Central
"	190	150'	38' 09"	Central	"	95	185'	55'	Central	"	192	185'	60' 32"	Central
600 x 75	21	160'	28'	Central	"	99	178'	38' 89"	132/46	"	194	185'	55'	Central
"	180	150'	38' 09"	104/46	"	112	150'	38' 09"	Central	"	314	250'	80'	Central
"	186	120'	34' 92"	Central	"	176	178'	44' 45"	132/46	"	154	304' 8"	101' 6"	Central
"	190	150'	38' 09"	Central	"	179	178'	55'	132/46	"	305	304' 8"	152' 4"	Central
700 x 75	78	178'	44' 45"	132/46	800 x 150	161*	185'	55'	135/50	"	306	304' 8"	101' 6"	Central
"	79	178'	44' 45"	Central	"	162*	185'	55'	Central	"	197	304' 8"	101' 6"	Central
"	100	178'	38' 09"	132/46	"	163*	185'	66' 67"	135/50	"	139	400'	152' 4"	Central
"	101	178'	31' 75"	132/46	"	169†	185'	55'	135/50	"	191	350'	150' 3"	Central
"	196	178'	55'	Central	"	177	185'	55'	135/50	"	193	400'	125'	Central
600 x 100	188	120'	34' 92"	Central	"	183	185'	55'	Central	"				
"	304	150'	38' 09"	104/46	"	211*	185'	60' 32"	135/50	"				
"	353	120'	34' 92"	Central	1000 x 150	167	185'	55'	125/60	"				
700 x 100	77	178'	44' 45"	132/46	"	174	250'	80'	Central	"				
"	92	185'	55'	135/50	"	182	185'	55'	Central	"				
"	95	185'	55'	Central	"	187	220'	66' 67"	Central	"				
"	99	178'	38' 89"	132/46	"	201	185'	60' 32"	125/60	"				
"	112	150'	38' 09"	Central	"	210	185'	60' 32"	Central	"				

*Wheels Nos. 161, 162, 163, and 211 are of stronger type than the other wheels for 800 x 150 tyres.
Grease gun equipment is now a standard fitting on all wheels.

†Wheel No. 169 is fitted with Ball Bearings (L/NB)

THE PALMER TYRE LIMITED,

Contractors to the Admiralty, the War Office, and the Air Ministry,

Telegrams:—
"Tyricord, Cannon, London."

100-106, CANNON STREET, LONDON, E.C.4.

Telephone:—
City 1477 (Two Lines).

(573)

Save time by using the Air Mail.

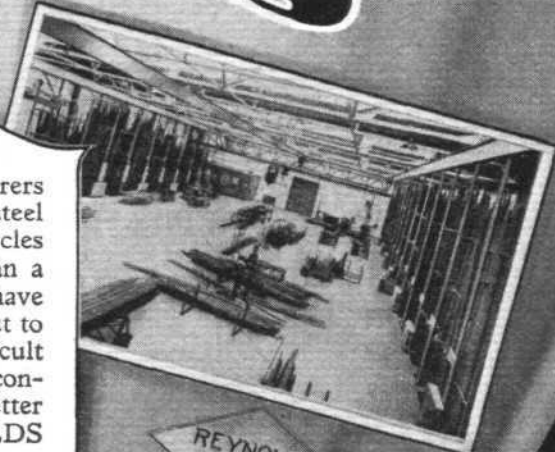
REYNOLDS AIRCRAFT TUBING



REYNOLDS
 TUBING

"Among British tube manufacturers who have been producing steel tubing for Bicycles, Motor Cycles and Motor Cars, for more than a quarter of a century, and who have now seriously laid themselves out to cater for the very special and difficult requirements of aircraft constructors, few can claim better record than the REYNOLDS TUBE COMPANY LTD."

—Extract from "Flight,"
 December 20th, 1928.



REYNOLDS
 TUBING

REYNOLDS TUBE CO., LTD.
 HAY HALL WORKS, TYSELEY,
 BIRMINGHAM.

R.H.S.

The WESTLAND WAPITI



with Bristol Jupiter VIII. Engine, as supplied to the Royal Air Force and Royal Australian Air Force.

A "general purposes" aircraft, suitable for reconnaissance, photography, wireless, advanced training, etc., fitted with Handley-Page Automatic Slot-gear. Supplied in both wood and all-metal construction. Undercarriage interchangeable for fitting seaplane floats.

Other Westland aircraft include the Westland "Widgeon," a highly efficient light 'plane for club and private use, with Cirrus, Genet or Gipsy Engines. Enquiries invited.

WESTLAND AIRCRAFT WORKS,

(Branch of Petters Ltd.),

Works: YEOVIL, ENGLAND.

CONTRACTORS TO THE AIR MINISTRY, AUSTRALIAN GOVERNMENT, ETC.

Telephone: Yeovil 141.

Telegrams: "Aircraft 141 Yeovil."

Kindly mention "Flight" when corresponding with advertisers.

IN PARLIAMENT

Airship R 100

SIR S. HOARE, on Jan. 31, in reply to Col. Woodcock, said the airship R 100 should be ready for her shed trials in the early spring. It is not practicable to state how long these trials will take, but I hope that the airship will make her first flight within a few weeks thereafter. The total amount of payment already made by the Government in connection with its construction is £235,000.

Imperial Airways, Ltd. Subsidy

SIR S. HOARE, in reply to Major Hills, said the total amount of subsidy which may be earned by Imperial Airways, Ltd., in respect of their European and Eastern services in the current financial year is £230,600; and in 1929-30, £335,000. No part of this was paid by the Government of India.

Refuelling Aircraft

SIR SAMUEL HOARE, in reply to Viscount Sandon on February 6, said experiments in refuelling aircraft in flight have been carried out successfully at the Royal Aircraft Establishment, and the experience thus gained is available whenever it is required. To prescribe this method of refuelling, however, for Service or civil machines, as a matter of routine, could hardly, I think, be regarded as a reasonable or indeed practicable requirement.

National Flying Services, Ltd.

COLONEL APPLIN asked the Secretary of State for Air (1) whether he is aware that a company called the National Flying Services, Ltd., has been formed to establish aerodromes and flying schools and generally to carry on the business of aviation on a commercial basis; that the schemes of this company were developed in close co-operation with an official or officials of the Air Ministry, with the result that this company has secured for itself a privileged position amongst its commercial competitors by the promise of an exclusive subsidy from the Government; that one or more of the officials has since resigned from the Air Ministry and is now financially interested in this company; and whether he can give an assurance to the House that the existing aviation clubs and similar companies will not be penalised by being placed in a worse position financially by reason of the discontinuation of Government subsidies or other assistance;

(2) Whether, before granting a Government subsidy to National Flying Services, Ltd., he has satisfied himself that the commercial prospects of this enterprise have been examined and approved by any commercial aviation expert outside the Air Ministry;

(3) Where any aerodromes now under construction by private firms are situated; and whether the proposed subsidy to National Flying Services, Ltd., will be extended to them?

SIR S. HOARE: In view of the widespread interest in the scheme to which these questions refer, I will answer them somewhat fully. As regards the first part I would refer to the White Paper (Cmd. 3264) which was laid last week and which gives brief particulars of the grants to be made to National Flying Services, Ltd.

I may supplement these particulars by saying that I am hopeful that this company's organisation will give those interested in aviation in a number of provincial centres an opportunity of associating themselves with the development of flying in this country and, if they so desire, of actually qualifying as pilots, which has hitherto been denied them, but for which I am satisfied that there is at the present time a widespread and growing demand. I may add that the scheme is essentially one of payment by results, and I need not elaborate the manifest advantages which will accrue to the State, no less than the general public, if it meets with the success which its promoters anticipate. These advantages—for example, the provision of a large reserve of qualified pilots and the creation of a chain of new aerodromes and landing

grounds—could not possibly be secured otherwise than through the medium of a commercial organisation without a very much larger expenditure from Air Votes than is entailed by the proposed grants.

As regards the second and third parts of the question, proposals for the formation of a company on these lines were first communicated to me by Captain Guest to whose public-spirited efforts to promote the development of British aviation I should like to pay a passing tribute. Prior to their embodiment in the scheme now adopted, there were naturally a number of consultations both with myself and Air Ministry officials. It is the case that one temporary official, whose services I am very sorry to lose, has resigned his appointment to take up work in the new company. I may add that his appointment was a technical one, and that he was not responsible in any way for the conduct of the financial negotiations. Any implication, therefore, that undue favour was secured by the company through his instrumentality is entirely devoid of foundation.

As regards the last part of the question, no change is contemplated in the agreements under which the existing light aeroplane clubs are subsidised.

The commercial prospects of the company are a matter for the promoters and subscribers, and the Air Ministry's part in the transaction is confined to the payment of certain grants dependent upon the concrete results explained in the White Paper. Since, however, certain acknowledged financial and commercial flying experts have accepted seats on the board, it would seem a legitimate deduction that these gentlemen are satisfied that the company's scheme is soundly conceived and has a reasonable prospect of success.

Apart from the aerodromes in contemplation by municipal authorities and National Flying Services, Ltd., the only aerodrome under construction by a private firm, so far as I am aware, is that situated at Heston, near Hounslow. An application for a licence for an aerodrome site at Tavistock has also been received from a private individual. The self-contained and comprehensive scheme of National Flying Services, Ltd.—covering as it does the provision of aircraft as well as aerodromes and landing grounds, the training of pilots, and numerous other activities for the development of flying in a number of different centres where there are at present no facilities—is obviously in an entirely different category from the construction of isolated individual aerodromes with or without shed accommodation.

Royal Air Force Recruits

MR. THURTELL asked if it is customary for the Air Force to accept recruits for service under assumed names when it is known that such names are assumed?

SIR S. HOARE: There can hardly be said to be anything "customary" in a matter of this kind, but it is well recognised that men do enlist in assumed names, for a variety of reasons, and definite provision is made in the regulations that a man who has done so may subsequently have his true name recorded by making a statutory declaration in the prescribed form.

MR. THURTELL: Will the right hon. Gentleman answer my question as to whether the Air Force accept a recruit when they know that he is using an assumed name?

SIR S. HOARE: "Yes, they do."

Schneider Trophy

SIR S. HOARE, in reply to Mr. Day, said certain Royal Air Force pilots are now under training on high speed aircraft with the view to the selection of a British team to compete in this year's Schneider Trophy race. Four high speed aircraft are being developed for the purpose of the race, two by the Supermarine Aviation Works, Ltd., and two by the Gloster Aircraft Co., Ltd. The engines are being produced by D. Napier and Son, Ltd., and by Rolls Royce, Ltd. America, Italy, France and Great Britain have entered for the next contest.

"The Flutter of Aeroplane Wings"

ON February 28 next Mr. R. A. Frazer, B.Sc., A.F.R.Ae.S., will read a paper on "The Flutter of Aeroplane Wings" before the R.Ae.S. and Inst.Ae.E.

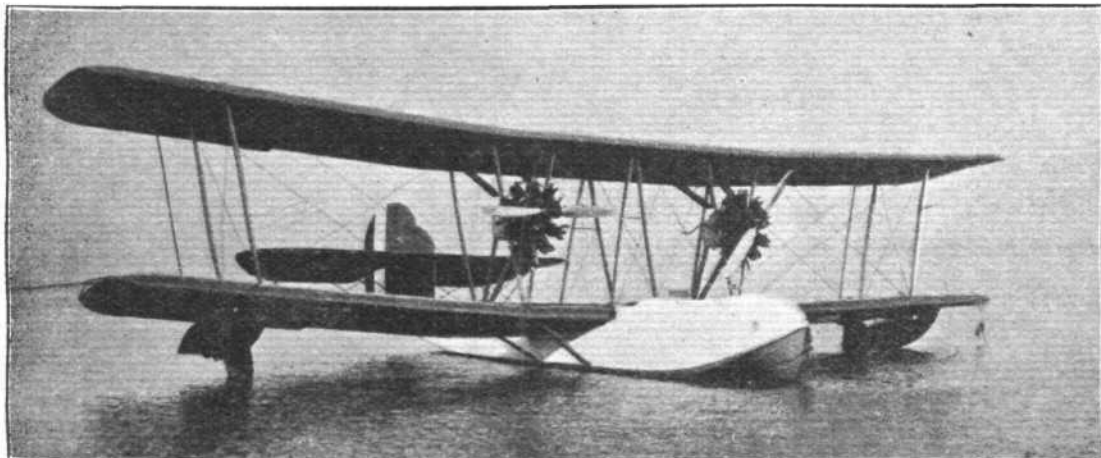
Investigation of wing flutter in this country was initiated by the Accidents Investigation Sub-Committee of the Aeronautical Research Committee in 1925, and has been continued under the general guidance of the Flutter Sub-Committee. The subject has been studied experimentally and theoretically both at the Royal Aircraft Establishment and at the National Physical Laboratory.

In Part I of Mr. Frazer's lecture the principles of flutter and its prevention will be explained. Demonstrations will be given of wing flutter, and a slow-motion cinematograph film of the flutter of a model biplane will also be shown.

In Part II the results of experimental tests of the theory

will briefly be surveyed; and in Part III the final design recommendations will be stated and explained.

It is believed that a prevention of such types of flutter as involve the ailerons would meet most practical requirements at the present day. The desired result could be attained by adoption of a single measure, namely, "irreversibility" of the aileron control. If, on the other hand, the ailerons are to be operated in the conventional manner, compliance with a number of conditions appears to be advisable. In particular, each aileron should be heavily damped and definitely under-balanced aerodynamically, its centre of gravity should lie slightly ahead of the hinge axis, and its moment of inertia should be as small as possible. The design recommendations also include measures for the prevention of flutter of the wing as a whole in flexure and torsion.



The Canadian
Vickers "Varuna"
flying-boat
(Armstrong-
Siddley "Lynx"
or Wright
"Whirlwind"), a
twin-engine
machine equipped
for fire fighting,
designed and
constructed in
Canada.

A REALISTIC MODEL

Some Further Notes and a New Type

In our issue for December 13 last we described and illustrated a model monoplane produced by A. E. Jones, Ltd., of 97, New Oxford Street, W.C.1, and referred to a parasol type that was under way. This week we are able to give an illustration of this new model, "Zephyr," together with a few notes as to its qualities. Constructionally, it is identical to the model previously described, except for the wings and one or two refinements, resulting from the tests we had the pleasure of carrying out with the first model.

The wings are in one piece, 24 in. span, with a dihedral angle, and are mounted above the fuselage on a wire cabane of four inverted V's. The latter receive fore and aft wire projections on the wing, which slide within them so that the position of the wing as regards distance from the nose of the fuselage may be varied through half an inch. Two locking screws on the forward wing supports secure the wings in the desired position once this has been ascertained.

Another modification consists of a positive adjustment for the tail plane. This, together with the rudder, is rigidly bolted on the fuselage at the forward end, but projecting below the centre of, and attached to, the tail plane is a short length of wire, which slides within a lug attached to the stern post of the fuselage as the tail plane is raised or lowered. A small locking screw on this lug locks the wire in the lug at any desired adjustment of the tail plane.

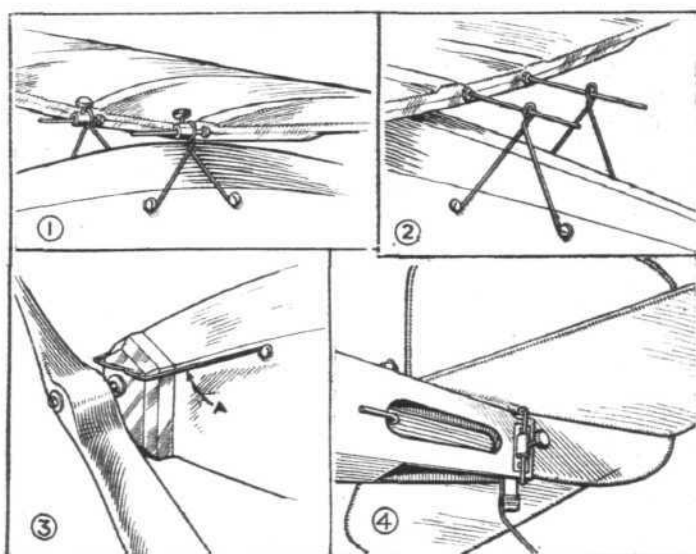
Both these adjustments of wings and tail plane are important features, for we have found from our flying tests with both types that they are very "sensitive on the controls"—but once the correct adjustment has been found they fly remarkably well. They are, in fact, "realistic" not only in appearance, but in performance also. In this respect, therefore, these models, while not giving the performance as regards duration and distance of some models—which by no means resemble a full-sized machine in appearance—provide much interesting study during flight.

As regards the parasol model, we have found that this is perhaps more easy to fly than the other, and is less particular in the matter of wind gusts. This, of course, is due to the fact that it is of larger span and is not so heavily loaded. The performance of the first model, however, has been improved considerably since our last report, and this has been achieved by the fitting of different wings. These are now of slightly larger span with reduced chord, so that while the model is still—in comparison with the "parasol"—a fairly speedy and sensitive flyer, it appears to be more stable than before.

This question of wings brings us to a feature of these "A. E. J." models worth bearing in mind. Having, to start with, an exceptionally strong but light fuselage, efficient motor, sturdy undercarriage, and tail surfaces of ample proportions, it is a very easy matter to experiment with different types of wings, which can be constructed

to one's own ideas around the very simple mounting arrangement provided on the fuselage, while the substitution of different airscrews and motors is also an easy matter, especially if one is provided with a supply of spare spindles and "engine mounts."

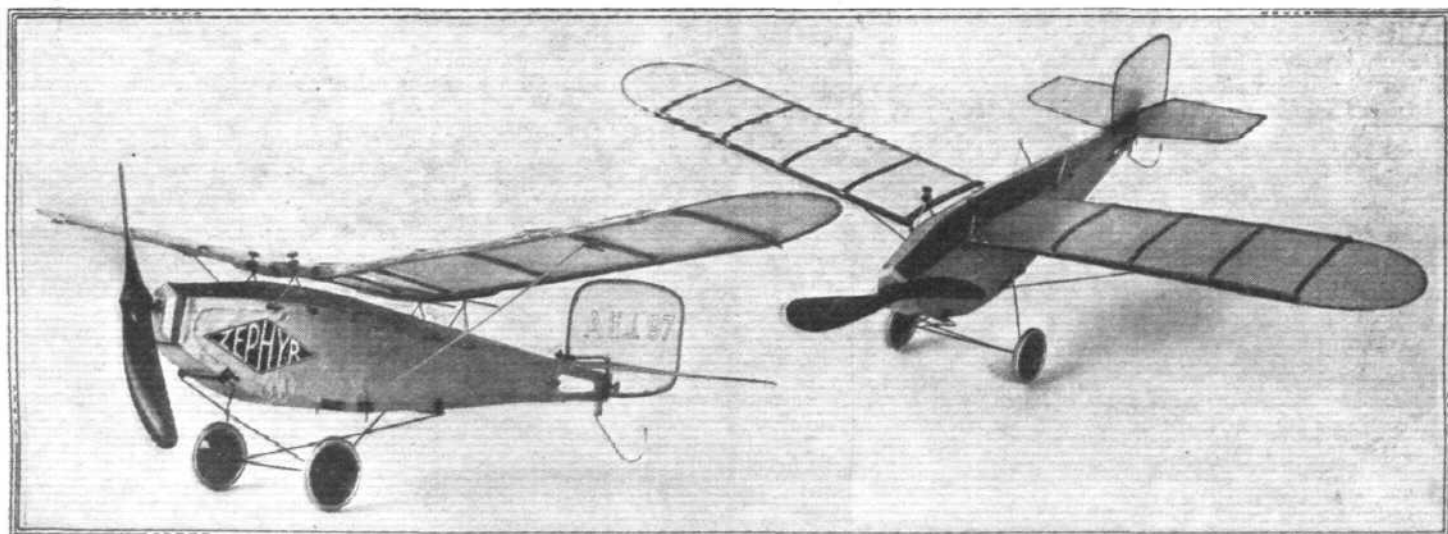
Thus, we look at these models in the light of something more than mere toys—although even as such they constitute strong, well-made ones capable of providing plenty of fun—



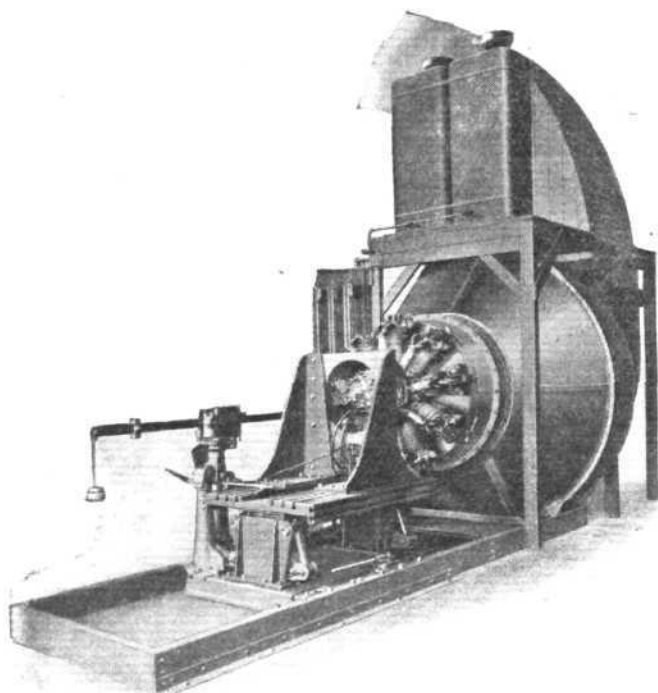
A REALISTIC MODEL : Some constructional details. (1) and (2) The adjustable wing attachment; the wing can slide fore or aft in the "cabane" and then be locked in position by two screws. (3) The detachable aluminium "engine mounting" (carrying the airscrew) is locked in situ by a wire clip, A. (4) The angle of incidence of the tail plane can be adjusted by the locking screw mounted on the fuselage.

but think they have some real scientific value. Anyway, we congratulate Mr. A. E. Jones on his efforts.

In conclusion, we would very much like to receive "Flying Reports" on these models from any of our readers who may happen to possess one, and would also like to give a little bit of advice to "Zephyr" owners—and that is, if they do not get good results at first, not to be disappointed, but experiment carefully and slowly so as to get the "knack" of launching and adjusting, for, as with nearly all model aeroplanes, this is very important.



A REALISTIC MODEL : On the left is the new parasol-type model produced by A. E. Jones, Ltd., which has remarkable flying qualities. The other illustration shows the improved two-piece wings (incidentally, mounted on the "parasol" fuselage) now fitted in the first "sporting" model previously described in "Flight."



THE "HEENAN-FELL" PATENT VARIABLE AIR BRAKE DYNAMOMETER

(As used by the British Air Ministry, etc.)

Specially designed for the production testing of Aero Engines running at substantially similar speeds of airscrew shaft.

This apparatus supplies an air blast of sufficient volume and velocity to ventilate air-cooled engines without requiring the expenditure of power from any external source.

Simultaneously it measures the power developed by the engine undergoing test with the same degree of accuracy as offered by the "Froude" system.

If professionally interested, send for free copy of illustrated Catalogue No. 80.

Heenan & Froude Ltd

Worcester

England

ACCESSIBILITY

This is an outstanding feature
of the New Type Power Jet

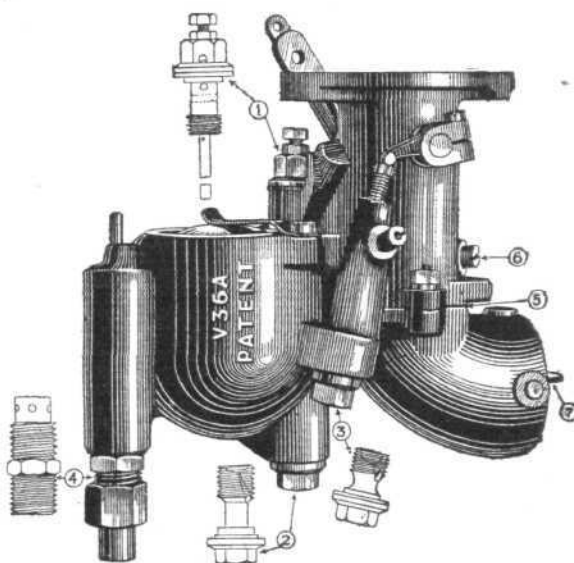
CLAUDEL HOBSON

CARBURETTER

1. Immediate removal, by one operation, of slow-running jet assemblage without alteration to setting.
2. Immediate removal, by one operation, of main jet.
3. Immediate removal, by one operation, of power jet.
4. Immediate removal, by one operation, of needle valve seating after detachment of petrol pipe.
5. Detachable air intake, giving easy access to choke tube.
6. Easy removal of choke tube.
7. Air shutter for starting purposes.

H. M. HOBSON, LTD.,
47-55, The Vale, Acton, London, W.3.

'Phone : Chiswick 4231 (4 lines). 'Grams : "Assemblage, London."



**Generous allowance for
Old Type Carburetters**



[Copyright Photo by Topical Press.]

SAFETY IN FLIGHT

Vertical Descent
 No Stalling
 Ease of Control

*Write us for
 full details.*

The CIERVA AUTOGIRO Co., Ltd.

Bush House, Aldwych, London, W.C.2.

Telephone: CENTRAL 4861.

Telegrams: CIERVAGIR, London.

HANDLEY PAGE AUTOMATIC SLOT CONTROL

"Although the HANDLEY PAGE AUTOMATIC SLOT DEVICE remains an extra, it is significant that without one exception every 'Moth' which is now on order is to be fitted with the gear."

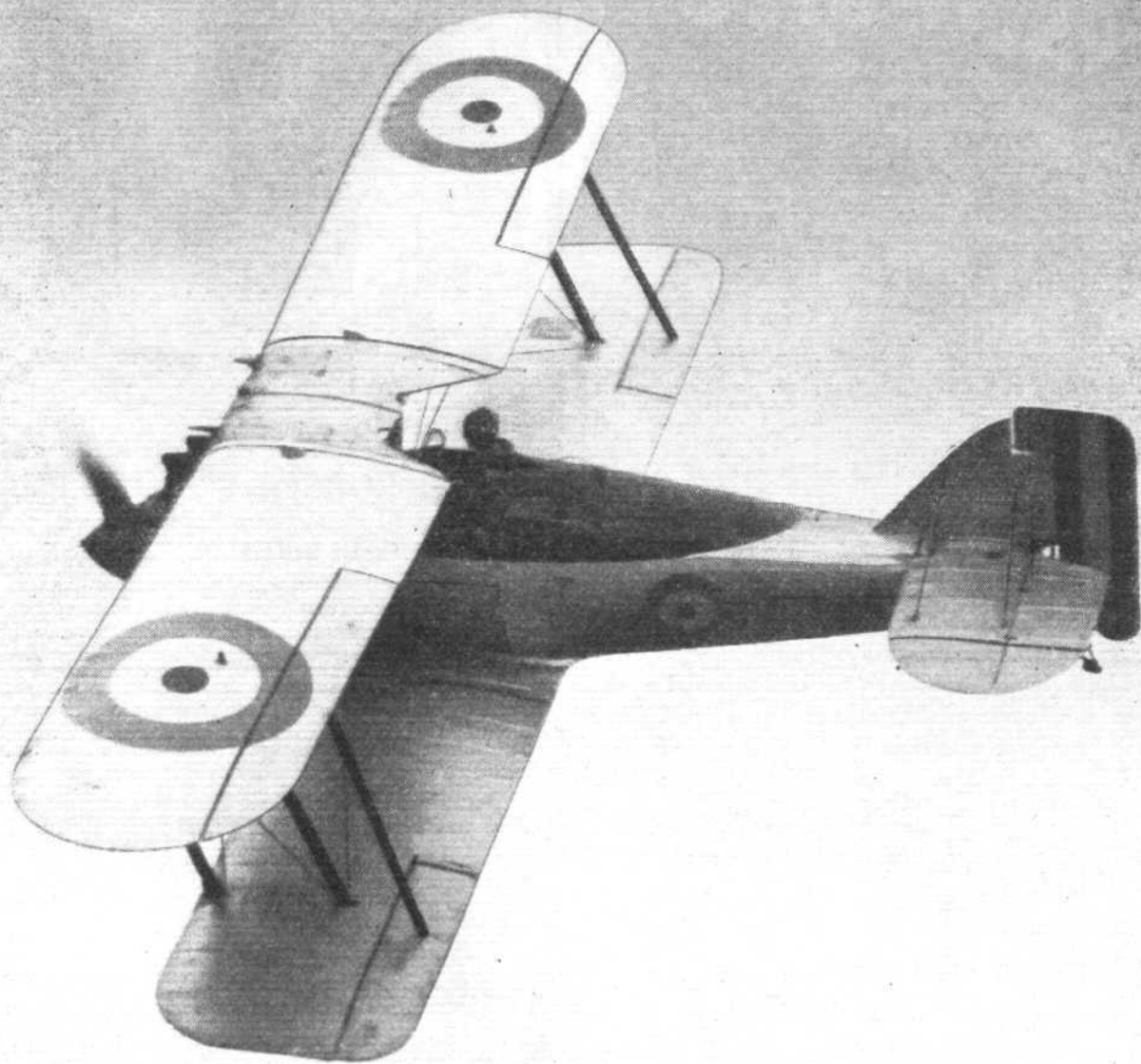
"CANADIAN AIR REVIEW."

December, 1928.

HANDLEY PAGE, LTD.
 CRICKLEWOOD,
 LONDON, N.W.2.

Kindly mention "Flight" when corresponding with advertisers.

GLOSTER



*Gloster "Goldfinch" all-metal
single-seater fighter.*

GLOSTER

AIRCRAFT COMPANY LIMITED
SUNNINGEND WORKS, CHELTENHAM, GLOS.
BROCKWORTH WORKS and AERODROME, GLOS.

Flight photograph

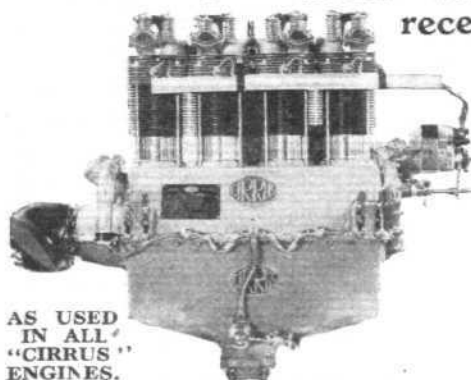
Save time by using the Air Mail.

KE-965

SPECIAL HEAT RESISTING
VALVE STEEL
for
INTERNAL COMBUSTION ENGINES

As used by Hinkler in his "Cirrus" Engine on his Australian Flight.

The most efficient Valve Steel introduced during recent years.



AS USED IN ALL "CIRRUS" ENGINES.

1. It forges and machines quite well.
2. The heat treatment is very simple.
3. It retains a high tensile value at high temperatures.
4. Withstands rigorous thermal changes without any detrimental effects.
5. It will not harden under any conditions, and is therefore never brittle.
6. It is very tough at all temperatures and under all conditions.
7. It resists erosion by exhaust gases to a remarkable degree.

KAYSER ELLISON & CO., LTD.
CARLISLE STEEL WORKS,
SHEFFIELD.

ESTABLISHED OVER 100 YEARS.

ALUMINIUM CASTINGS

OF EVERY DESCRIPTION
FOR AIRCRAFT WORK.

Any Size—Any Quantity.

"COANAILIUM"

A NON CORROSIVE ALLOY
FOR MARINE & OUTDOOR WORK

PRICE RIGHT
WORK RIGHT
SO
PLEASE WRITE
TO
APPROVED FIRM



THE ALUMINIUM MAN



ROBERT W. COAN Ltd.

THE ALUMINIUM FOUNDRIES,
COAN HOUSE, DUNCAN ST., N.1.

Branch Works:—219, GOSWELL RD., E.C.1.

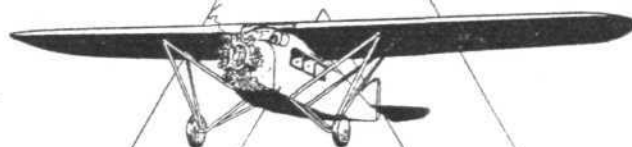
TELEPHONE: CLERKENWELL 4466 (4 LINES).

TELEGRAMS: KRANKASES, NORDO, LONDON.



A. LEVILL
1926

THE SIGN OF SAFETY.



R.O.P.
AVIATION SPIRIT.

RUSSIAN OIL PRODUCTS LTD.

MOORGATE HALL, LONDON, E.C.2.

PHONE: LONDON WALL 9204-5.

Kindly mention "Flight" when corresponding with advertisers.

THE ROYAL AIR FORCE

London Gazette, February 5, 1929

General Duties Branch

The follg. Pilot Officers are promoted to rank of Flying Officer:—N.H. Fresson, W. R. M. Higgs, D. Dickson, H. W. Duffey, W. P. J. Thomson (Jan. 1); D. G. P. Fitzpatrick (Jan. 8); R. A. T. Stowell (Jan. 30).

Flight Lt. S. T. B. Cripps, D.F.C., is placed on retired list at his own request (Feb. 5); Flying Officer G. R. A. Pallin is transferred to Reserve, Class C (Jan. 31); Lt. A. M. Rundle, R.N., Flying Officer, R.A.F., ceases to be attached to R.A.F. on return to Naval duty (Feb. 1).

Medical Branch

The follg. are granted temp. comm. as Flight Lts. on re-employment:—E. E. Isaac (Jan. 4); G. S. Ware (Hon. Squadron Leader) (Jan. 7). Flying Officer A. L. St. A. McClosky is promoted to the rank of Flight Lt. (Feb. 2).

Capt. W. Wormington (Army Dental Corps) is granted a temp. comm. as Flight Lt. (Dental) on attachment to R.A.F. (Feb. 1); Flight Lt. W. R. Wotton (Capt. Army Dental Corps) relinquishes his temp. comm. on return to Army duty (Feb. 1).

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

Flying Officer R. G. Shaw is transferred from Class AA to Class C (Feb. 2); Flying Officer J. Sewell relinquishes his comm. on completion of service, and is permitted to retain his rank (Feb. 5); Pilot Officer J. S. Davidson relinquishes his comm. in the Special Reserve on account of ill-health (Feb. 6).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commander C. C. Durston, to H.Q., India, for Course at Staff College, Quetta, 2.1.29.

Squadron Leaders: H. I. Hamner, D.F.C., to Air Ministry (D.O.I.), 31.12.28. W. B. Farrington, D.S.O., to No. 100 Sqn., Bicester, 31.12.28. C. St. Noble, to R.A.F. Depot, Uxbridge, 13.1.29. J. Blackford, to Air Ministry (D. of T.), 19.1.29. O. R. Gayford, D.F.C., to No. 47 Sqn., Middle East, 21.1.29. H. L. Beatty, to R.A.F. Base, Calshot, 1.2.29. P. F. Fullard, D.S.O., M.C., A.F.C., to R.A.F. Depot, Uxbridge, 25.1.29. R. L. Sweeney, to Royal Air Force College, Cranwell, 5.2.29. D. L. Blackford, to Air Ministry (D.O.I.), 25.1.29. K. L. Boswell, to Air Ministry (D. of E.), 5.1.29. F. W. Wilson, to No. 1 Flying Training Sch., Netheravon, 5.2.29.

Flying Officers: L. P. Hirsh, to Royal Airship Works, Cardington, 1.2.29. E. A. McKinley-Hay, to No. 3 Flying Training Sch., Grantham, 1.2.29. C. F. Stevenson, to No. 2 Sqn., Manston, 30.1.29. G. H. Randle, to Elec. and Wireless Sch., Flowerdown, 22.12.28. R. A. Seaton, to H.Q., Middle East, 11.1.29. R. W. Steele, to R.A.F. Depot, Uxbridge, 11.1.29. R.

Kellett, to No. 30 Sqn., Iraq, 15.1.29. A. T. S. Studdert, to Andover, Communication Flight, 31.1.29. A. L. Mortimer, to No. 204 Sqn., Catterwater, 8.2.29. H. E. Nowell, to No. 4 Sqn., S. Farnborough, 26.2.29. J. E. McC. Henderson, to Elec. & Wireless Sch., Flowerdown, 5.2.29. Pilot Officer B. F. Cox, to No. 2 Flying Training Sch., Digby, on appointment to a Permanent Comm., 31.1.29.

Accountant Branch

Flying Officer S. C. George, to No. 203 Sqn., Middle East, 18.1.29.

Medical Branch

Wing Commander F. C. Cowtan, to Air Ministry (D.M.S.), 29.1.29. Flight Lieutenant E. Thompson, to Palestine General Hospital, instead of to H.Q., Middle East, as previously notified.

Flying Officers: A. L. St. A. McClosky, to Princess Mary's R.A.F. Hospital, Halton, 11.2.29. J. J. Quinlan, M.B., and P. B. L. Potter, M.B., to R.A.F. General Hospital, Iraq, 24.1.29. G. T. O'Brien, M.B., to No. 47 Sqn., Middle East, instead of to H.Q., Middle East, as previously notified. A. E. Vawser, to Medical Training Depot, Halton, on appointment to a Short-Service Comm., 1.2.29.

A VISIT TO SOUTHAMPTON AIRPORT

[The following account of a visit to the Imperial Airways Airport at Southampton was written by Frederic G. Hobbs, one of the students from the Aircraft Construction Classes of the Southampton University College. We publish it in the hope that it may encourage other students to make similar efforts at recording their impressions of matters aviatric.—Ed.]

On Saturday, December 15, a party of students from the Aircraft Construction Classes of the Southampton University College, paid a visit to Imperial Airways Airport, with the intention of seeing the "Short Calcutta" flying-boat used on the cross-channel route.

We arrived at the entrance of the Airport with our class instructor, Mr. H. T. Tremelling, at 2.30 p.m., and were met by one of the officials of Imperial Airways.

On admission to the port, the first thing that we saw was the debris of the canvas hangar which was blown down in the gale which raved a few weeks ago. Afterwards, we proceeded to the frost-covered slipway and embarked in the launch to go out to see the "Calcutta," which was moored about 50 yards out in the River Itchen. In a few minutes we were all on board and eager to look round.

The first thing that struck me was the extreme comfort and the great amount of space inside the hull. The upholstery was splendid, and each one of the padded chairs was equipped with an air cushion which, besides being very comfortable to sit on, was useful as a lifebelt if the necessity should arise.

At this point, the gentleman who was escorting us remarked that if we would like to see the more constructional side of the hull, we could proceed aft, where the hull was not upholstered. Therefore we opened the little door leading to the after compartment, and we were very surprised to see the great deal of space that remained. We were told by our escort that this compartment was used for carrying extra luggage, spares, etc., but when using it, care had to be exercised in the stowing of such things, as it tended to make the boat tail heavy. Our escort kindly suggested that if any of us wished to ask questions he would answer us to the best of his ability. He said that the hull was made in sections, and that it was built in a vertical position, the sections being arranged in tier fashion. He also made reference to the metal wings, the ribs of which were constructed entirely of duralumin tube; he showed us a sketch to illustrate the way in which the joints were made.

The main compartment, he said, was designed to accommodate 15 persons, and that the portion which came below the water level was divided into air-tanks, so that any damage done to the hull in this compartment would not necessarily cause the boat to sink.

We then proceeded forward again to see the pilots' cockpit. This was very interesting, and the arrangement of the instruments and controls was very neat.

Then we went on deck to see the wing construction, engines, and the general superstructure.

The interplane struts were marked with a red band, which, on enquiry, we were told meant that the strut was of metal construction, and that this was a standard method of marking on all British machines.

The three Bristol Jupiter engines were neatly arranged on the metal nacelles. The engines appeared to be the chief attraction of the machine more especially the centre one, because the gas starter was contained in its nacelle. I think most of us students crawled up into the manhole to see this piece of machinery, because of the fascination it held.

After having explored the wings, tail, and engines, we all assembled on the forward deck, where our escort explained to us the advantage of having the four-bladed propellers made in two pieces. He said that it was more convenient for carrying, and that a spare propeller could be carried in the aft compartment of the machine, if desired.

Then, as we stood on the deck talking, the flying-boat gave a sudden lurch to one side. We looked down on to the water to see what had caused this, but it was evidently caused by the waves on the surface. But as our gaze wandered, we saw a mysterious brown paper parcel come drifting down with the tide towards us. Our escort called to two men who were in a small rowing boat working on the fabric of the starboard wing, to fish it out and see what it was. It was much to our amusement to discover that the parcel contained—a dead chicken.

A little later we returned to the slipway, and looked round the Airport. In one corner were the floats of the "Friendship" and we were interested to note effects resulting from the action of salt water upon the shell.

Finally, we returned to the exit, where Mr. Tremelling cordially thanked our escort, on behalf of us all, for his exceptional kindness in showing us round and telling us the many things that he had done about the "Calcutta" and the Airport.

PERSONALS

Married

The marriage took place on February 11, at Farnham Parish Church, of FLYING OFFICER JOHN HUNTER MCNEILL CAMPBELL, third son of Col. Ian M. Campbell, C.B.E., T.D., and Mrs. Campbell, of Elm Grove, Ockham, Ripley, Surrey, and Miss FLORENCE MARY (MOLLIE) BRISCOE, eldest daughter of Mr. and Mrs. F. E. T. Briscoe, of Dial House, Farnham. Canon E. M. Girling officiated.

The marriage took place on February 12, at St. Margaret's, Westminster, of Mr. HENRY WILLIAM PEARSON-ROGERS, R.A.F., elder son of the late Mr. H. Pearson-Rogers, of Joannesburg, and of Mrs. George Lunn, of 1, Ulster Terrace, Regent's Park, and Miss FRANCESCA MARY BISSHOPP, only child of Dr. and Mrs. Francis Bisshopp, of Parham House, Tunbridge Wells. Mr. R. L. R. Atcherley, R.A.F., was best man.

To be Married

The engagement is announced of Mr. RODNEY PART, R.A.F., and EILEEN MARGARET, only daughter of the late Mr. H. FILLINGHAM-WILLIAMS, of Bellfield, near Ringwood, and Mrs. FILLINGHAM-WILLIAMS, of Crofton, Stafford Road, Ringsea.

The engagement is announced between Sqn.-Ldr. C. A. REA, A.F.C., R.A.F.O., only son of Mr. and Mrs. W. R. Rea, of Belfast, and MARGARET,

only daughter of the late Maj. C. S. Lowson, I.M.S., and of Mrs. Lowson, of 24, Maybury Mansions, London, W.1.

Item

The will of the late Mr. FRANK HEDGES BUTLER, of Regent Street, W., and of St. James's Street, S.W., director of Messrs. Hedges and Butler, wine merchants, the founder of the Royal Aero Club, who died on November 27, aged 72, has been proved at £5,261.

No. 3 Squadron, R.F.C. and No. 3 (Fighter) Squadron, R.A.F. 5th Annual Re-Union Dinner.

THE above dinner will be held at the Trocadero at 7.45 p.m. for 8 p.m. on Friday, March 1. Group-Capt. P. B. Joubert de la Ferte, C.M.G., D.S.O., will take the chair. Marshal of the Royal Air Force Sir Hugh Montague Trenchard, Bart., K.C.B., D.S.O., D.C.L., LL.D., will be the guest of honour. Tickets at 12s. 6d. (wines extra, gratuities included) will be obtainable at the dinner. Former members of the Squadron wishing to attend are requested to inform: The Hon. Secretary, Re-Union Dinner Club, No. 3 (Fighter) Squadron, Royal Air Force, Upavon, Wilts.

AIR POST STAMPS

By DOUGLAS ARMSTRONG

(Editor of "The Stamp Collector")

Air Post in Ecuador

THE day is not far distant when the whole of the South American continent will be covered with a network of air lines connecting all the principal cities and States. Experimental air post flights were made between Buenaventura (Colombia) and Guayaquil (Ecuador) and return on June 12-16 last, when about 380 letters, etc., were carried and struck with a special cachet in red, reading "PRIMER CORREO AEREO INTERNACIONAL DEL ECUADOR Junio 16 de 1928." As an outcome of these flights a contract has been concluded with the Sociedad Colombo-Alemana de Transportes Aereos for a regular air post service between Ecuador and Colombia, for which purpose special provisional stamps have been issued pending the arrival of an official issue to be used in conjunction with the private air mail stamps of the operating company. The S.C.A.D.T.A. has for seven years past successfully maintained the air post service in Colombia itself and is now engaged in extending its operations to neighbouring countries.

Air Stamps in Bolivia

Rumours concerning an impending issue of official air post stamps from this country are now confirmed by the announcement that in accordance with a recent Government decree a set of three values has been printed at the Imprentas Unidas, La Paz, comprising 10, 20 and 35 centavos, which represent the various surtaxes upon air-borne correspondence in Bolivia.

Catapult Air Covers

The institution of a "ship to shore" aerial letter delivery from the trans-Atlantic liner *Ile-de-France* by means of a catapulted hydroplane has provided air post collectors with an original and interesting addition to their collections. Some sixteen hundred missives were despatched on the outward voyage from Le Havre, on August 8, at a special fee of 10 fr. Nearly double that number was consigned from New York to Le Havre, and so great was the run on 5, 10 and 20-fr. stamps at the steamship post office that the postal agent applied to the French Consul-General in New York for authority to surcharge a supply of the smaller denominations to denote the supplementary fee. This was granted, with the result that 3,000 copies of the 90 c. (Berthelot) and 1,000 of the 1.50 fr. (Pasteur) were overprinted "10 Fr." to meet the emergency. This mail was delivered at La Bourget by Lt. Demougeot on August 23, about 18 hours before the liner docked. Besides the regular packet-boat cancellation "New York au Havre" the majority of the covers were impressed with a souvenir cachet in six lines, reading:—

AOUT-SEPTEMBRE 1928

PREMIER LIASON POSTALE AERIENNE

TRANSATLANTIQUE

PAR HYDROAVION LANCE PAR CATAPULTE

DE "L'ILE DE FRANCE"

PILOTE LIEUTENANT DE VAISSEAU L. DEMOUGEOT

Persian Air Provisionals

The stock of overprinted Persian air post stamps of 1927 being exhausted and the new definitive series not yet ready for issue, a limited number of high value fiscal stamps was similarly overprinted with the addition of a large numeral of value to enable the service to be maintained. They comprise 3 kr. orange-brown, 5 kr. dark brown, 10 kr. violet, 20 kr. green and brown and 30 kr. green. The set is already quoted at £4, and promises to be as difficult to come by as the three highest denominations of the previous series.

Picturesque Moorish Air Stamps

One of the most picturesque series of air mail stamps that has ever been issued made its appearance recently in Morocco. Although primarily intended for a charity-cum-postage issue and sold for double face value in aid of a local relief fund, the presence of a winged device at the top of the frame design, coupled with the inscription "Postes Avion," converts them into a regular air post issue, for which purpose they are alone available. The set consists of ten values, the subjects of the various vignettes being indicated in parentheses: 5 c. blue (Arab fantasia), 25 c. red (native ploughing with camel and ass), 20 c. carmine (caravan passing Roman ruins at Saffi), 75 c. brown (view of Marrakesh), 80 c. dark olive (sheep grazing at Azrou), 1 fr. orange (view of Fez), 1.50 fr. greenish blue (aerial panorama of Tangier), 2 fr. brown (aerial view of Casablanca), 3 fr. violet (storks on the old wall at Rabat), 5 fr. sepia (fête in honour of the new Sultan of Morocco). The issue was limited to 300,000 sets.

Reed Claims Recognised

WE understand that as a result of a court decision in America, the Hamilton Aero Manufacturing Co., of Milwaukee, and the Standard Steel Propeller Co., of West Homestead, Penn.—both manufacturing metal airscrews—have agreed to recognise the Reed Patents, and henceforth pay royalties to the Curtiss-Reed Co. in respect of airscrews produced by these two firms; the name "Reed" will also be stamped on each airscrew.

Fokker Aircraft

THE Avia Aircraft Manufacturing Co., of Praha, are to construct two types of Fokker aircraft—namely, the Fokker F.VII type fitted with one Bristol "Jupiter" engine, and the Fokker F.VII 3m type fitted with three Wright "Whirlwind" engines. Both types of engines are also constructed under licence in Czechoslovakia. Walter, Ltd., of Praha, build the "Jupiters," and the "Whirlwinds" are built by a factory belonging to the Skoda group. Eleven countries are now constructing Fokker aircraft under licence, which is stated to be a record number of licences granted by an aircraft manufacturing company.

Aircraft by Hire Purchase

MERRIAM'S AVIATION BUREAU, of 64, Victoria Street, S.W.1, is opening its 1929 campaign with the announcement that hire purchase for second-hand aircraft is now offered for the first time. A pilot and a ground engineer have also been engaged by Capt. Warren Merriam.

Change of Address.

REID AND SIGRIST, LTD., have now changed their address. In the future they are at Canbury Park Road, Kingston-on-Thames, Surrey. The old address was Athenæum Works, The Vale, Hampstead, N.W.3.

PUBLICATIONS RECEIVED

Meteorological Office. Report of the 7th Meeting of the Commission for Synoptic Weather Information of the International Meteorological Organization, London, May, 1928. H.M. Stationery Office, Kingsway, London, W.C.2. Price 6s. 6d. net.

The North-East Coast Exhibition, May-October, 1929. Prospectus. Exhibition Offices, Pearl Buildings, Northumberland Street, Newcastle-upon-Tyne.

R.A.F. Flying Training Manual. Part III. Seaplane Flying. Air Publication 1098. H.M. Stationery Office, Kingsway, London, W.C.2. Price 1s. 6d. net.

NEW COMPANY REGISTERED

V. L. B., LTD.—Capital £1,000, in £1 shares. Objects: to carry on the business of manufacturers, importers, exporters and repairers of and dealers in aeroplanes, hydroplanes, airships, balloons and aircraft of all kinds, etc. First directors: Sir Robert C. Witt, C.B.E. (chairman), Van-Lear Black, R. MacColl. Solicitors: Stephenson, Harwood and Tatham, 16, Old Broad Street, E.C.2.

AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1927

Published February 14, 1929

27,661. E. KELLER. Supporting-surfaces of flying machines. (304,262.)
32,809. F. MAYER AND BRISTOL AEROPLANE CO., LTD. Wind-indicators. (304,429.)

APPLIED FOR IN 1928

Published February 14, 1929

18,667. J. B. GABRIELSON. Air-cooling systems for i.c. engines. (304,561.)

FLIGHT,

The Aircraft Engineer and Airships

36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telephone: Holborn 3211.

Telegraphic address: Truditur, Westcent, London.

"FLIGHT" SUBSCRIPTION RATES.

UNITED KINGDOM

ABROAD*

	s.	d.		s.	d.
3 Months, Post Free...	7	7	3 Months, Post Free...	8	3
6 " " " " " "	15	2	6 " " " " " "	16	6
12 " " " " " "	30	4	12 " " " " " "	33	0

* Foreign subscriptions must be remitted in British currency.

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 36, Great Queen Street, Kingsway, W.C.2, and crossed Westminster Bank.

Should any difficulty be experienced in procuring "FLIGHT" from local newsvendors, intending readers can obtain each issue direct from the Publishing Office, by forwarding remittance as above.

AUSTER TRIPLEX AERO SHIELD.

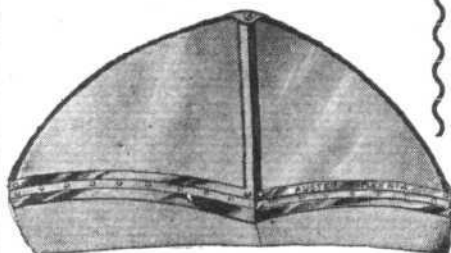
MODEL No. 4.

As fitted to D.H.50 Machines.

PROTECTED SIR ALAN COBHAM

on his

EPOCH MAKING FLIGHTS.



AUSTER FOOT PUMP.

Maximum Output.

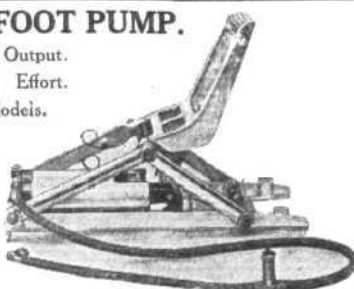
Minimum Effort.

In 3 Models.

Large Cars,
No. 1, 42/6

Light Cars,
No. 3, 35/-

Garage, No. 2,
60/-.



Auster

Contractors to British & Foreign Governments

126-123, New King's Road, Fulham, S.W.6.

Putney 5301 (5 lines).

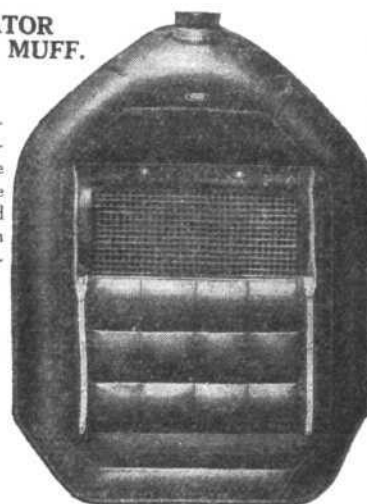
BIRMINGHAM: Crown Works, Barford St.

Phone: Midland 2123.

MANCHESTER: 306, Deansgate.

MOTOR RADIATOR MUFF.

The Muff partly opened protecting the bottom of the Radiator and ensuring an even temperature.



**S
T
R
I
P**

SPECIALISTS IN THE
ROLLING AND HEAT
TREATMENT OF
AIRCRAFT STRIP
AND SHEET STEEL.

TO ALL AIRCRAFT
SPECIFICATIONS.

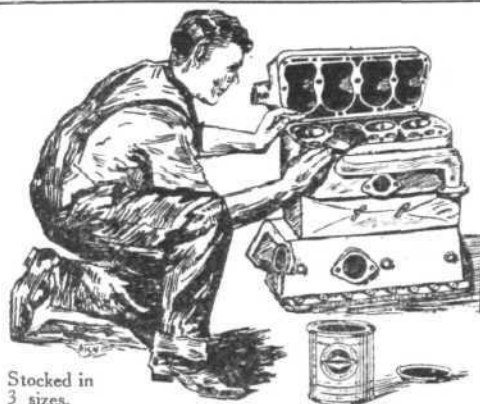
J. J. HABERSHON & SONS

LTD.
HOLMES MILLS, ROTHERHAM.

**S
T
E
E
L**



TRIPLEX SAFETY GLASS CO., LTD., 1, ALBEMARLE ST., LONDON, W.1.



HERMETICOLL

Liquid Jointing

makes perfect joints
and saves time and
money.

MAKES
HIGH PRESSURE
JOINTS
PERMANENTLY
LEAK-PROOF.

Known as
L'Hermetic in France,
Belgium and all other
countries.

Stocked in
3 sizes.

Full particulars from THE PATENT MOTOR PRODUCTS CO.
11, Store Street, London, W.C.1.

'Phone—Museum 1221.

'Grams—"Patenmotor, London."

AERONAUTICA

Illustrated
International
Monthly.

Organ of Italy's Aircraft Constructors and Aviators. Most
varied and widest circulated Monthly Aircraft Journal in the
world. All who are occupied in Aviation should read this Journal.

Yearly Subscription, 100 lire. Specimen Copies, 10 lire.

AERONAUTICA, VIA GESU No. 6, MILAN, ITALY.

BULL'S RUBBER CO., LTD.

Dunlop, Michelin, Pirelli

New or Second-hand.

SPECIAL CLEARANCE LINES.

Note Address,

3, Upper St. Martin's Lane, W.C.2.

Gerrard 1347.

AVIATION BOOKS

"Duralumin," By LESLIE AITCHISON ... 7d.

("Flight" Library—Vol. II.) Post Free

"Flying," By LT.-COL. W. LOCKWOOD MARSH, M.A. ... 1/3

Post Free

"Eolus" (or The Future of the Flying

Machine), By MAJOR OLIVER STEWART, M.C. ... 2/9

Post Free

"The ABC of Flying," By LT.-COL. W. LOCKWOOD MARSH, M.A. ... 2/9

Post Free

"Pilot's 'A' Licence," By JOHN F. LEEMING ... 3/9

Post Free

"Aerobatics," By MAJOR OLIVER STEWART, M.C. ... 5/4

Post Free

"The Art of Flying," By CAPTAIN NORMAN MACMILLAN ... 5/6

Post Free

"The Strategy and Tactics of Air

Fighting," By MAJOR OLIVER STEWART, M.C. ... 6/6

Post Free

"ABC of Flight," By W. LAURENCE LE PAGE ... 8/-

Post Free

"The Law in Relation to Aircraft,"

By LAWRENCE ARTHUR WINGFIELD, M.C., D.F.C., and

REGINALD BRABANT SPARKES, M.C. ... 13/-

Post Free

"Civil Aviation" ... 13/-

Post Free

"Skyward," By COMMANDER RICHARD E. BYRD, U.S. Navy. ... 15/6

Post Free

All above are obtainable upon application to:

"FLIGHT" Office,

36, Great Queen Street, Kingsway, W.C.2.

Save time by using the Air Mail.



MISCELLANEOUS ADVERTISEMENTS.
18 WORDS or less, 3/-, then 2d. per word
 Display Caps Throughout, 1/6 per line.
 Situations Wanted ONLY, 18 Words, 1/6.
 1d. per word after.

PATENTS.

STANLEY, POPPLEWELL & FRANCIS,
 International Patent Agents, Jessel Chambers,
 38, Chancery Lane, London, W.C.2. Telephone:
 Holborn 6393; Telegrams: "Notions, London."

A. P. THURSTON, D.Sc., M.I.Mech.E., M.I.A.E.,
 F.R.Ae.S.

PATENTS, Trade Marks and Designs.—Bank
 Chambers, 329, High Holborn, W.C.1. Holborn
 2542.

AIR SURVEY.

THE AIRCRAFT OPERATING CO., LTD.,
 8, New Square, Lincoln's Inn, London (Holborn
 8131), and Bulawayo, Southern Rhodesia; Cairo,
 Egypt; Rio de Janeiro, South America. Contractors to
 the Ordnance Survey. Laboratories and Sub-
 sidiary Company for aerial photography in the British
 Isles, **AEROFILMS LTD.,** Colindale Avenue, Hendon.
 (Colindale 6157.)

AIR SURVEY CO., LTD., 39, Grosvenor Place,
 S.W.1 (loane 6048), Monkey Point, Rangoon,
 and 12, Hungerford Street, Calcutta.

AVIATION INSURANCE.

FOR INSURANCES of Every Description con-
 nected with Aviation, apply to **BRAY, GIBB &**
CO., LTD., 166, Piccadilly, London, W.1. Enquiries
 welcomed.

CONSULTANTS.

THE Design and Production of "Lighter-than-
 Air" craft is a speciality of **THE AIRSHIP**
DEVELOPMENT CO., LTD., 39, Victoria Street, S.W.1,
 Aeronautical Engineers and Consultants. Telephone:
 Victoria 6521/2 (two lines).

CLOTHING.

WAINWRIGHT'S FOR FLYING CLOTHING.
 Contractors to Colonial and Foreign Govern-
 ments. All clothing guaranteed. As supplied to the
 leading flyers of the day. Write for our special
 catalogue. Genuine K.A.F. Sidcot Suits, 5 ft. to
 5 ft. 9 ins. only, 57/6. Best quality Leather Flying
 Coats in all styles, 85/-, 105/-, 126/-. Waterproof
 Flying Coats, lined teddy fleece and oilskin, 60/-.
 R.A.F. Sheepskin Flying Boots, all sizes, 25/-.
 R.A.F. Pilot's Gauntlet Gloves, 12/6. Flying Mask
 Goggles, unsplinterable, lined fur, 12/6. Inter-
 communication Earphones, complete connections and
 "Y" pieces, 12/6. Flying Helmets, trimmed fur,
 12/6.—Inspect the largest stock of leather clothing at
WAINWRIGHT'S, 300-302, Euston Road, London,
 N.W.1. 'Phone: Museum 6280.

LEWIS'S FOR FLYING EQUIPMENT OF
LEVER DESCRIPTION. Leather Flying Coats,
 87/6, 110/-, 120/-. Double Breasted, 65/-, 85/-,
 105/-. New Flying Suits, all sizes, fitted fur collars,
 60/-. Flying Helmets, best quality only, fur
 trimmed, 14/6. Flat or round type of phone, 5/-.
 Y-piece and Adapter, 3/3. Tubing and Rubber
 Connections, 3/-. Genuine Government Silk Gaunt-
 let Undergloves, 3/6 per pair. Triplex Goggles of
 every description.—**Lewis's, Leather Clothing**
Manufacturer, 19a & 27, Carburton Street, London,
 W.1. Museum 4793. No connection with any other
 firm.

TRANSLATIONS.

MANSON'S (TRANSLATORS) LIMITED, Com-
 mercial and Technical Translations executed
 promptly. Moderate rates. Special experience in
 Aircraft and Aero Engines. 6, John Street, Adelphi,
 London, W.C.2. (Telephone: Reg-nt 4703.)

HIRE PURCHASE.

HIRE PURCHASE HAS COME.
WE ARE THE FIRST in the field to offer
 hire purchase terms to buyers of
 second-hand aircraft.—Apply at once for our com-
 prehensive list of machines and engines; all sold with
 C. of A.—**MERRIAM'S AVIATION BUREAU, 64, Victoria**
Street, S.W.1. 'Phone: Victoria 8428. 'Grams:
 'Exboxkite, Sowest, London.'

EXCHANGE.

EXCHANGE 1927 10-40 h.p. Schneider Sports
 Fabric balloon-Coupe, F.W.B., small mileage, for
 Light Aeroplane,—63, Ingleby Road, Ilford.

EMPLOYMENT.

BE PREPARED for the coming great "BOOM"
 in Aviation, and Register at once. (Licensed
 annually by L.C.C.).—**MERRIAM'S AVIATION BUREAU,**
64, Victoria Street, S.W.1.

ALAN COBHAM AVIATION Ltd.

150, New Bond Street, W.1.

'Phone Mayfair 2908. 'Grams: "Talsundar, London."
 Surveys conducted for Municipal authorities
 and commercial undertakings. In addition to
 choosing the best possible site, we prepare a lay-
 out and can contract for complete equipment.

AERODROME CONSULTANTS.

ADVISORY.

EXPERIENCE AND REPUTATION TELLS.
 Consult **CAPT. WARREN MERRIAM, A.F.C.,**
 A.F.R.Ae.S. for **SOUND INDEPENDENT ADVICE**
 on Aviation. Appreciations received from hundreds
 of Pupils and Clients since 1911, to date.—Write
APPOINTMENTS, 64, Victoria Street, S.W.1.

AIRCRAFT CAMERAS.

"EAGLE" Aircraft Cameras and Equipment
 Specialists in Air Photographic Apparatus. Full
 particulars from the manufacturers and patentees,
WILLIAMSON MANUFACTURING CO., LTD., Litchfield
 Gardens, Willesden Green, London, N.W.10. 'Phone:
 0073-4 Willesden. 'Grams: "Kinetogram, Willroad,
 London." Contractors to the Admiralty, Air Ministry,
 War Office.

SITUATIONS VACANT.

REQUIRED. Senior Draughtsmen and Section
 Leaders with first-class aircraft experience.—
 Write, giving experience, age, salary, etc., to
HANDLEY PAGE, LTD., Cricklewood, N.W.2.

REQUIRED IMMEDIATELY. Sheet Metal
 Fitters, preferably accustomed to Metal Aircraft
 Construction. Suitable men will have a good run of
 work.—Apply, **SHORT BROS.,** Rochester.

REQUIRED IMMEDIATELY. Skilled Mechanics
 with first-class experience in Flight and
 Maintenance work.—Full particulars of training and
 experience should be forwarded to Box No. 8191,
 c/o **FLIGHT, 36, Great Queen Street, Kingsway,**
 London, W.C.2.

SENIOR DRAUGHTSMEN for Aeronautical
 Work. Previous aircraft experience not
 essential. Full details, age and salary required.—
VICKERS (AVIATION) LTD., Weybridge, Surrey.

SITUATIONS WANTED.

ENGLISHMAN, bachelor, 37, requires Commercial
 or Private Appointment. 6 years practical
 engineering (automobile and aeronautical), 10 years
 Army, R.A.F. and Civil (Field Officer), 4 years
 shipping and petroleum business. Travelled abroad
 extensively. Interview London.—Box 2004, **SCRIPPS'S,**
 South Molton Street, W.1.

YOUTH (16½), ex-Public School, very keen and
 physically sound, desires post in close touch
 with aviation.—Box No. 1645, c/o **FLIGHT, 36, Great**
Queen Street, Kingsway, London, W.C.1.

ASSISTANT DETAIL DESIGNER, disengaged
 shortly; 15 years' experience general engineer-
 ing, flying, D.O. and stressing, metal construction.—
 Write, Box No. 1651, c/o **FLIGHT, 36, Great Queen**
Street, Kingsway, London, W.C.2.

FOR SALE.

NEW Wire Ropes, Aeroplane Strands and Cords;
 half price.—**THE LONDON ELECTRIC FIRM,**
 Croydon. Telephone: Purley 1222 & 1223 (2 lines).

AIRCRAFT INSTRUMENTS, ETC. Special
 Offer:—Airspeed Indicators, new, in maker's
 boxes, 40-160 m.p.h., 5/9; Barometers converted
 from R.A.F. Altimeters, mounted in propeller bosses,
 36/-; Radiator dashboard Thermometer, 50-100°
 Centigrade, 10/6; Cross Levels, 1/9; Revolution
 Indicators, 3 ft. flexible drive, 18/6; Shock Absorber,
 elastic, 1 in., 5d. yard; 25 lb. Oil Pressure Gauges, 5/6;
 5-way Switch Boxes, 2/9. Above Postage Paid.
 —**COLEY LTD., Ordnance Works, Queen Elizabeth**
Road, Kingston-on-Thames, 'Phone 0365. Free List
 obtainable of tools, wirestrainers, etc.

WANTED.

AVIATION AND AIR POST SOUVENIRS
 (documents, flown envelopes, cards, stamps,
 autographs, etc.). Prompt and liberal payment.
 Write first.—**BM/ABOH, London, W.C.1.**

AERIAL LETTERS AND CARDS carried by
 famous aviators in any part of the world wanted
 by collector.—Particulars and price to **HARLAND,**
Crathie House, Dorking.

AIR TAXIS.

AIR TAXIS, LTD., Stag Lane Aerodrome,
 Edgware. Phone: Colindale 6307.

AEROFILMS LIMITED: Aerial Tours, Taxi
 Work, Aerial Photography, Air Survey.
 Colindale Avenue, Hendon, N.W.9. 'Phone:
 Colindale 6581 (2 lines).

EAR DEFENDERS.

PREVENT injury due to excessive noise or change
 of pressure; small sounds heard as usual. Price,
 by post, 4/2 per pair.—**THE MALLOK-A-MSTRONG**
Co., 39, Victoria Street, S.W.1. (NEW ADDRESS).

FLIGHT TUITION.

LEARN TO FLY AT THE MIDLAND AERO
CLUB. Four tuition machines, two fully
 qualified expert instructors. No waiting.—Parti-
 culars, **HON. SECRETARY, 22, Villa Road,**
Handsworth, Birmingham.

BROOKLANDS SCHOOL OF FLYING, LTD.,
 Brooklands Aerodrome. 'Phone: Byfleet 437.
 Highest standard of instruction on "Moth" and
 Avro aircraft. Private accommodation on Aero-
 drome.

THE DE HAVILLAND SCHOOL OF FLYING,
 Stag Lane Aerodrome, Edgware, Middlesex.
 Fourteen machines: Nine Moths, five advanced
 training machines. Seven Pilot Instructors, Lecture
 Classes, Restaurant and Recreation Pavilion. The
 largest and most up-to-date civilian organisation
 for flying tuition in the British Empire.

LEARN AT LYPNE for lowest rates and quick
 tuition. No waiting list. Moth Machines. 65
 miles from London. Experienced Instructor. Com-
 fortable Club-room and Bar.—Apply, **HON. SEC.,**
CINQUE PORTS FLYING CLUB.

SURREY FLYING SERVICES, Croydon Aero-
drome (Telephone: Croydon 1736), have vacancies
 in their Flying School for Pupils at Moderate Rates.
 Avro Aircraft used. Residential accommodation at
 Aerodrome Hotel.

TUITION.

WE offer sound instruction in Aeroplane Design,
 Fitting and Rigging, and Aero-Engine Fitting
 and Kigging; also expert training for Ground
 Engineers (Categories A, B, C and D) and Special
 Pilots (Licence B). Write to-day for our "Aero-
 nautical Engineering" Booklet.—**INTERNATIONAL**
CORRESPONDENCE SCHOOLS, LTD., 182, International
Buildings, Kingsway, London, W.C.2.

MODELS AND PARTS.

A. E. JONES, LTD.
 The Original House for Model Aeroplanes and
 Accessories; Quality always of the highest standard.
 Price List free.—97, New Oxford Street, London,
 W.C.1. Tel.: Museum 4090.

D.A.P. MODEL AEROPLANE CO. The
 Pioneer Firm for Models, Accessories
 and Materials. Scale Models a speciality. Catalogue
 4d.—187, Roperingham Road, Southfields, S.W.18.
 'Phone: Putney 0636.

1-HORSEPOWER Petrolmotor Castings, 9/9.
2 Catalogue 3d.—**MADISONS, Littleover, Derby.**

MACHINES & ENGINES FOR SALE.

DE HAVILLAND MOTH X Type, fitted Cirrus
 Mark II. engine, dual control. Handley Page
 slotted wings. C/a till September. Flown approx.
 100 hours £500
DE HAVILLAND MOTH X Type, fitted Cirrus
 Mark II engine, phones. C/a expires 82.8.29.
 Just overhauled. Blue and aluminium. Flown
 175 hours £485
SE. 5A., fitted with 90 h.p. R.A.P. type engine,
 flown only five hours since complete overhaul. C/a
 twelve months from date of purchase £185
 All the above machines may be seen and tried by
 appointment.

Immediate delivery can be given of Gipsy-Moths.
MALCOLM CAMPBELL (London) 1927 Ltd., Byron
House, St. James's Street, S.W.1.
 'Phone: Regent 5171.

ANZANI 6 cyl. radial, 45 h.p., complete with
 Zenith carburettor, Bosch magneto, propeller,
 instruments and controls. Can be seen running any
 time. Bargain, £30.—**BALDWIN'S GARAGE, Totnes.**

CIRRUS ENGINE, MARK I, FOR DISPOSAL.
 Perfect condition, just been overhauled.—
 Box No. 40, c/o **FLIGHT, 36, Great Queen Street,**
Kingsway, London, W.C.2.

AIRCRAFT WANTED.

MODERN AIRCRAFT PURCHASED FOR
CASH.—**BROOKLANDS SCHOOL OF FLYING.**
 Telephone Byfleet 437.

Kindly mention "Flight" when corresponding with advertisers.



Actual photograph taken from accompanying 'plane, at instant after man had jumped and pulled the rip cord—his Irvin is seen instantly opening.

Jump—

---- Zip!

IT'S OPEN.— You're safe! Your fall stops. You rest in mid air. And then relax.

You glide smoothly, easily groundward, sharing the long-proven confidence of certain safety that Irvin Air Chutes have bred all over the world, in the minds of men who fly—and sometimes jump.

Scores and scores know what a life saver this is, from their own wide experiences in the air.

Already more than 150 aviators have been saved by use of their Irvin Air Chutes when naught else could possibly have brought them safely down.

Among these are aviators in the Air Forces of Great

Britain, Japan, Sweden, Denmark, Poland and the Argentine Republic, as well as scores in the United States.

A number indeed have been saved in commercial operations.

Many of the emergencies were of the most extreme nature, and in every case the Irvin Air Chute functioned perfectly.

After thorough investigation and rigid comparative tests, many Governments have adopted the Irvin Air Chute as the standard life-saving equipment for their Air Forces.

If extreme emergency—all un-announced as it usually comes—suddenly confronts you in the air, will you, too, be ready to meet it with Irvin confidence?



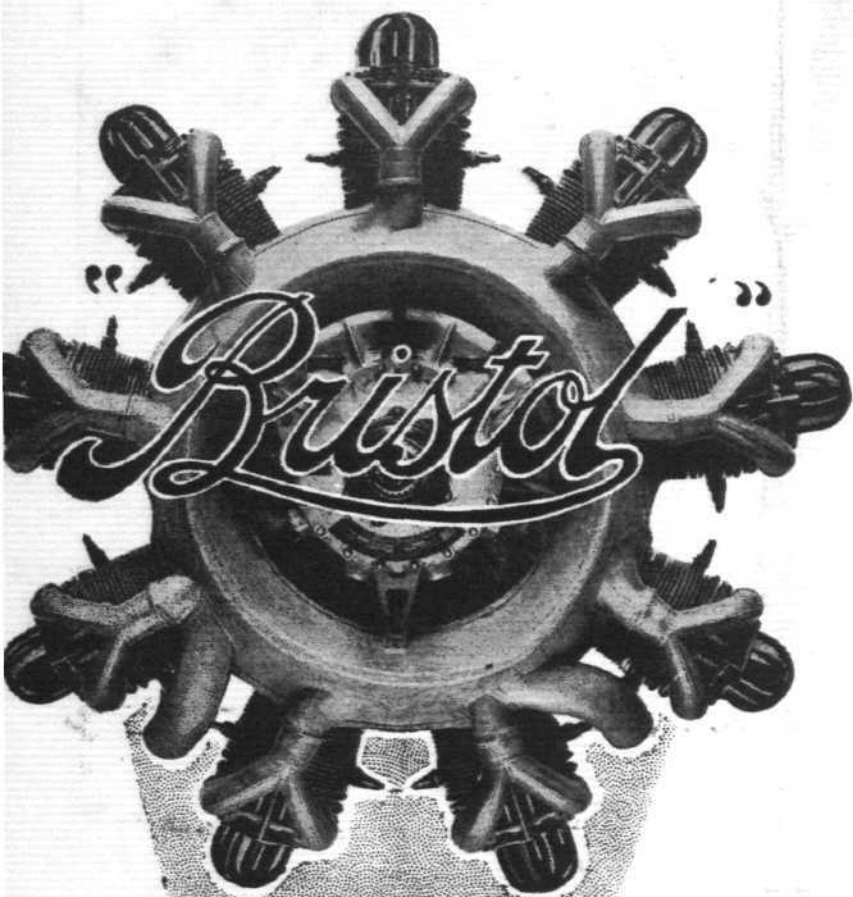
Irving Air Chute of Great Britain, Ltd.,

**Works Road, Letchworth,
Herts., England.**

Telephone:
LETCWORTH 370.

Cable & Telegraphic Address:
"IRVIN, LETCWORTH."

Save time by using the Air Mail.



AIRCOOLED AIRCRAFT ENGINES.

RELIABILITY and sound business-like EFFICIENCY—

these are the reasons why
the Jupiter is the most widely-
used aero engine in the world.

*There are types of "Bristol"
Jupiter engines for every type of
aircraft; ungeared Jupiters of 6.3,
5.3 and 5 to 1 compression ratios;
geared Jupiters of 5.8, 5.3 and
5 to 1 compression ratios, and
the gear-driven, supercharged,
Series VII, Jupiter.*

"For reliability fit the Jupiter."



THE BRISTOL AEROPLANE CO., LTD.,

Telegrams:
"AVIATION, BRISTOL."

FILTON — BRISTOL.

Telephone:
3906 BRISTOL.